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BEACH PROFILE CHANGE MEASURED IN THE TANK FOR LARGE WAVES 1956-1957 AND 1962

by

Nicholas C. Kraus

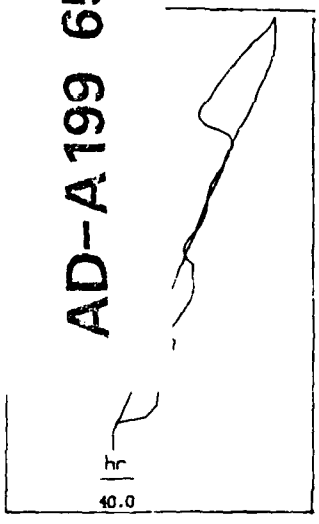
Coastal Engineering Research Center

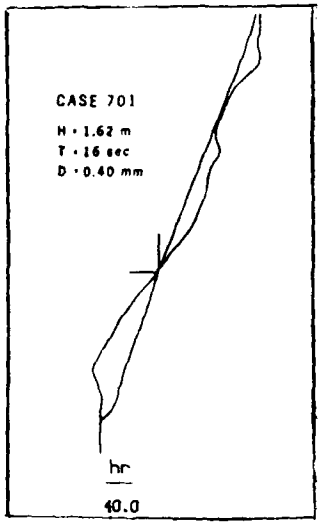
DEPARTMENT OF THE ARMY
Waterways Experiment Station, Corps of Engineers
PO Box 631, Vicksburg, Mississippi 39180-0631

and

Magnus Larson

Department of Water Resources Engineering
Institute of Science and Technology
University of Lund
Box 118, Lund, Sweden S-22100





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This report documents beach profile change, wave characteristics, and other quantities measured in two series of movable bed modeling experiments performed with the Coastal Engineering Research Center's Tank for Large Waves during 1956-1957 and 1962. These experiments used waves of height and period representative of field conditions. All major data are listed, including profile change, incident wave height and period, height and location of breaking waves, runup, water temperature, and sand grain size and fall velocity. Background information on experiment procedures and conditions is given to facilitate use of the data. Characteristic morphologic and cross-shore sand transport properties are presented to demonstrate general trends exhibited by the data and to allow comparison to other sources.

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PREFACE

The investigation described herein was authorized as a part of the Civil Works Research and Development Program by the Office, Chief of Engineers (OCE), US Army Corps of Engineers. Work was performed under Surf Zone Sediment Transport Processes Work Unit 34321 which is part of the Shore Protection and Restoration Program at the Coastal Engineering Research Center (CERC) at the US Army Engineer Waterways Experiment Station (WES). Messrs. John H. Lockhart, Jr., and John G. Housley were OCE Technical Monitors.

The study was conducted from 1 January 1987 through 31 December 1987 by Dr. Nicholas C. Kraus, Research Physical Scientist and Principal Investigator, Surf Zone Sediment Transport Processes Work Unit 34321, Research Division (CR), CERC, in conjunction with related engineering studies by Mr. Magnus Larson of the University of Lund, Sweden. The CERC portion of the study was under general supervision of Dr. James R. Houston, Chief, CERC; Mr. Charles C. Calhoun, Jr., Assistant Chief, CERC; Dr. Charles L. Vincent, Program Manager, Shore Protection and Restoration Program, CERC; and Mr. H. Lee Butler, Chief, CR, CERC. Work performed at the University of Lund was under general supervision of Dr. Gunnar Lindh, Head, Department of Water Resources Engineering, Institute of Science and Technology.

This report benefited from reviews by and discussions with Mr. John P. Ahrens, CERC; Mr. William A. Birkemeier, CERC; Mr. Charles B. Chestnutt, OCE; Dr. Cyril Galvin, Cyril Galvin, Coastal Engineer; Ms. Kathryn J. Gingerich, CERC; Dr. Robert J. Hallermeier, Dewberry & Davis; Mr. Thorndike Saville, Jr., formerly Technical Director, CERC; Mr. William N. Seelig, Naval Facilities Engineering Command; and Mr. George W. Simmons, formerly of CERC. The experiment conducted during 1956-1957 was conceived, planned, and supervised by Mr. Saville. The 1962 experiment was conducted by the late Joseph M. Caldwell, former Technical Director, CERC, and Mr. Saville. Mr. Simmons served as leading technician in execution of both experiments. Mr. Birkemeier was responsible for the 1979 effort to digitize the data under supervision of Mr. Saville. Dr. Hallermeier and Mr. Seelig exerted extraordinary efforts to preserve the data while staff members at CERC. This report was edited by Ms. Shirley A. J. Hanshaw, Information Products Division, Information Technology Laboratory, WES.

COL Dwayne G. Lee, CE, was Commander and Director of WES during report publication. Dr. Robert W. Whalin was Technical Director.

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CONVERSION FACTORS, NON-SI TO SI (METRIC)
UNITS OF MEASUREMENT

Non-SI units of measurement used in this report can be converted to SI (metric) units as follows:

Multiply	By	To Obtain
feet	0.3048	meters
gallons	3.785	liters
inches	2.54	centimetres
short tons (mass)	907.185	kilograms

BEACH PROFILE CHANGE MEASURED IN THE TANK FOR LARGE WAVES, 1956-1957 AND 1962

PART I: INTRODUCTION

Background

1. Engineering activities in the coastal zone may alter the pattern of sediment transport and bathymetry in the vicinity of the site, and expected changes in the profile must be estimated as part of the design process. For example, quantitative prediction of changes in the beach profile induced by wave action is required for designing structures, beach fill, and berms and dunes that will serve as shore protection against storms. Accurate data are the foundation upon which a quantitative understanding of beach profile change must be built.

2. To obtain the most useful data in the laboratory, experiments should be performed at a sufficiently large scale to reproduce the physical processes that are responsible for profile change on field beaches. There are limitations to laboratory experiments, even those of prototype scale. These include potential residual scale effects, artificial wave reflection, absence of very long wave motions, artificial vertical water circulation and seich, as well as absence of alongshore sediment movement if tanks are used. However, the capability to measure the response of the profile under controlled conditions of the laboratory and with systematic changes in sand grain size, wave characteristics, and water depth allows isolation of the underlying physical processes far more easily and much less expensively than can be done in field experiments. In this sense, complete elimination of longshore effects in tank studies may be viewed as a benefit.

3. During 1955-1983, the Beach Erosion Board (BEB) and its successor organization, the Coastal Engineering Research Center (CERC), operated a large wave tank called the "Tank for Large Waves" or the "Large Wave Tank" (LWT). Two series of movable-bed model experiments on beach profile change were conducted in the LWT. The series were mainly distinguished by the grain size of the bed material. Nine major cases, called "tests" in the original work, were run with each of two sand sizes (0.22 mm and 0.40 mm median diameter) with essentially the same water depth and "offshore" wave conditions. Cases

for a given grain size were characterized by waves of varying steepnesses, producing either accretionary or erosional profiles.

4. Only three sources of published information exist on the experiments from approximately the time period in which they were performed. In a landmark paper on scale effects in movable-bed models, Saville (1957) presents results of four cases pertaining to the 0.22-mm sand and similar experiments performed in two smaller tanks. Caldwell (1959) gives a short discussion and a table summarizing incident wave characteristics and shoreline change in selected runs of eight cases involving the 0.22-mm sand. Saville and Watts (1969) present some drawings of profiles and comparison of results for selected cases with the 0.22- and 0.40-mm sands. To date no report containing a full compilation of the data has been published on the experiment series with the 0.22-mm sand, and no detailed information has been publicly available on the second series of experiments performed using the 0.40-mm sand.

5. In recent years, tanks comparable in size to the LWT have been built in several countries. The capabilities afforded by modern instrumentation allow more efficient and accurate measurement of profile change, sediment transport, waves, and fluid flow than were possible during the experiments in the LWT. The cost of performing large movable-bed experiments is extremely high, however, and only a few such data collection programs have been reported (Kajima et al. 1983, Vellinga 1986, Dette and Uliczka 1987).

6. A wealth of data was collected in the pioneering experiments on beach profile change employing the LWT, and it is doubtful that experiments using the same wave and beach conditions will be performed again in any facility. The data thus constitute a valuable resource that should be preserved. Although three decades have passed since the experiments were performed, most of the original data is extant.

Scope

7. The purpose of this report is to fully document the experiments performed and the data obtained on beach profile change using the LWT. Measured beach profiles and wave characteristics are given for all major cases recorded in the original logbooks and other primary data sources. An effort was made to assemble background information on the characteristics of the tank and experiment conditions and procedures. This information is included to

facilitate interpretation of the results in unknown future uses of the data. Representative morphologic and transport properties are also given to demonstrate general trends exhibited by the data and to allow comparison to other sources.

8. Appendix A contains supplementary data associated with the profile change experiments: breaking wave height and location, sand fall velocity, runup, estimated water temperatures, and time-history of the water level for the case of a simulated tide. Appendix B contains plots of the measured profiles. The plots provide an overview of the sequence of profile change that occurred for each set of wave conditions and beach material. The plots were generated from the raw survey data contained in Appendix C. Unpublished documents and records of personal communications are cited in the text and collected the endnotes (preceding the references).

9. US customary (non-SI) units were used in design of the laboratory facilities and in making measurements. This system of units was maintained in this report in description of facilities and general discussion of the measurement procedure to avoid awkwardness in phraseology and to retain exact values for equipment design that would be lost in conversion to the metric system. (Conversion factors are given on page 6). Results that are likely to be used in research, such as wave heights, water levels, and volume changes, are given in metric units in the main text.

PART II: DESCRIPTION OF FACILITY AND EXPERIMENTS

Large Wave Tank

10. The LWT was originally located at the Dalecarlia Reservation in Washington, District of Columbia. Use of the tank at Dalecarlia, with a small generator installed, began in 1955. The tank began full operation in 1956 and was abandoned in 1973 when CERC moved to Fort Belvoir, Virginia. A new tank of identical specifications, in which the wave generator from the tank at Dalecarlia was used, was constructed at Fort Belvoir. The facility at Fort Belvoir became operational in 1975 and was mothballed in 1983. Information on the LWT at Dalecarlia is contained in a 1964 BEB report (Raynor and Simmons 1964), and a portion of the material in this section is excerpted from that report. Only information relevant to the movable-bed experiments is given here, so that only the Dalecarlia tank is of interest.

11. The concrete tank was 635 ft* long, 15 ft wide, and 20 ft deep and was located outdoors. A manually operated instrument carriage moved on horizontal rails along the top of both side walls of the tank. The instrument carriage carried personnel and instruments required to perform measurements. Approximately one million gallons of water were required to fill the tank to the standard operational depth of 15 ft. The tank was filled through either of two 5-in. lines leading from an 8-in. freshwater main. Water was supplied from the Dalecarlia reservoir. Filling normally required about 8 to 10 hr, and valves could be set to automatically cut off at any predetermined level to allow filling to take place during the night without loss of normal work time. Pictures of the tank are given in Figures 1 and 2.

12. The wave generator (Figures 3 and 4) consisted of a vertical bulkhead 15 ft wide and 23 ft high mounted on a carriage. The carriage moved back and forth along rails on the top of each wall of the tank; and two 42-ft 9-in.-long arms, connected to two driving disks at an adjustable eccentric, transmitted the oscillatory motion to the carriage and bulkhead. Each disk was 19 ft in diameter and weighed 14 tons. The disks were driven through a train of gears by an 510-hp constant speed electric motor. Motion of the

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* A table of factors for converting non-SI units of measurement to SI (metric) units is presented on page 6.

Figure 1. LWT, view toward wave generator (Fort Belvoir)

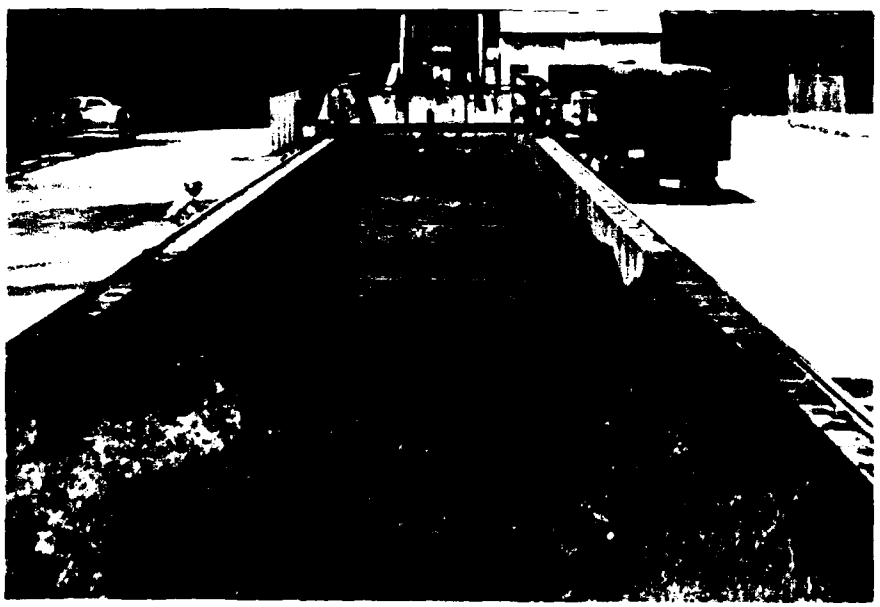

Figure 2. LWT, view toward wave generator (Dalecarlia)

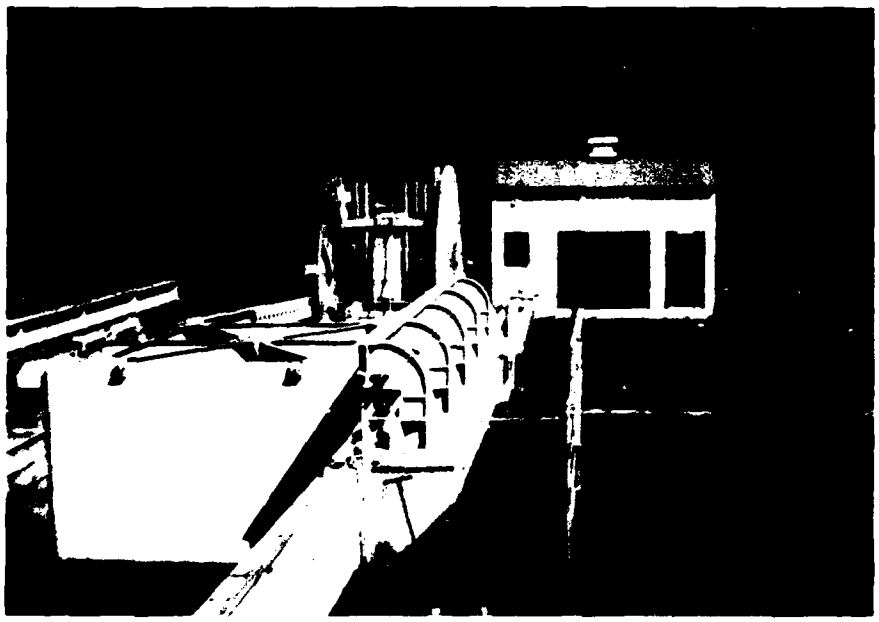

Figure 3. Wave generator in the LWT showing the bulkhead at lower left (Dalecarlia)

Figure 4. Wave generator in the LWT showing the large disks and drive-arm connector holes (Dalecarlia)

bulkhead was controlled by a series of gears that allowed generation of specific, discrete wave periods. Later, a variable speed 810-hp motor was installed such that, with one change of gears, a continuous range of wave periods between 2.6 and 24.8 sec could be generated. The maximum operational wave height was approximately 6 ft, although breaking wave heights up to 10 ft were recorded in the logbooks from the movable-bed experiments. Water spillage over the tank walls occasionally occurred.

Experiment Procedure

13. The general procedure followed during the movable-bed experiments performed during 1956-1957 and 1962 is described in this section.[1*]

14. Prior to the start of most new cases, sand was emplaced to form a 1 on 15 slope. About 1,700 cu yd of sand were required. A fine quartz sand of median diameter 0.22 mm was used in the experiment performed during 1956-1957, and a medium quartz sand of 0.40 mm median diameter was used in the experiment performed in 1962. Specific gravity of the sands was 2.65.

15. The initial beach slope was formed with a small bulldozer. A line was drawn on the side of the tank to direct the height of the bulldozer blade while grading the slope. No sand was allowed to remain on the bottom of the tank seaward of the toe of the beach after formation of the initial slope. The distance between the initial location of the toe of the beach and the wave generator bulkhead was approximately 315 ft for experiments with 0.22-mm sand and approximately 72 ft for experiments with 0.40-mm sand. The effective length of the tank was shortened for the experiment series utilizing 0.40-mm sand because another model had been installed at the end opposite the wave generator, and it was desired not to remove this model.

Depth surveys

16. Considerable effort was devoted to development of a profile rod that would give an accurate depth measurement and not sink into the bed. A rod with a pivoting foot produced the best results. Various sizes of feet were employed in a series of refinements of the survey rod. In making the profile surveys it was noted that the porosity of the sand bed differed slightly depending on location along the profile. Near the shoreline the sand

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* Endnotes section appears at the end of the main text.

became more compact under continued wave action, whereas near the toe of the slope, the bed surface became looser. In early runs, the survey rod was attached to a pulley; this was later converted to a crank system attached to the movable instrument carriage.

17. Depth surveys were made in 4-ft increments and at prominent breaks in slope at irregular time intervals from 1 to 16 times, not including the initial profile. The resultant beach profile change under wave action proved to be highly two-dimensional. In the experiment conducted during 1956-1957, surveys were first made along three lines parallel to the axis of the tank, but no significant lateral differences were found. Because of the observed lateral uniformity, subsequent surveys were limited to the center line of the tank. In the 1962 experiment, surveys were made along three lines, although they too exhibited lateral uniformity. If sand was transported seaward of the location of the initial toe of the beach, surveys were usually extended to a point where the horizontal floor of the tank was reached. Profile elevations were recorded in 0.1-ft increments.

Wave height and period

18. Wave height was usually measured with a stepped resistance gage placed seaward of the toe of the beach. It is believed that the spacing between resistance gage elements was 2 in. in earlier work and 1 in. in later work, but the date of change between element types is not known. Accuracy of wave height measurements is limited by this spacing, both at the crest and the trough, but the errors would tend to cancel since a difference is taken to obtain the wave height. Visual estimates of wave height were also made by use of markings painted on the wall of the tank. Wave period was set through the gearing mechanism of the wave generator. The period is exact because it was produced by a constant speed motor connected to a specific gear.

Wave reflection

19. The wave generator was run continuously between depth surveys (not in the burst mode) and the amount of reflection in the tank was not quantified. Reflection in tests with structures was apparent as large nodal points along the walls of the tank (Figure 2), whereas nodal points observed in the movable-bed experiments were smaller. Based on experience with many kinds of tests performed in the tank, including tests with rubble-mound structures for which notable reflection did occur, it is believed that reflection from the beach was small, particularly for the shorter period tests (3.75 and

5.6 sec).[2,3,4] The exception occurred when the beach eroded to expose the end wall of the tank in Cases 100 and 110. In these tests, reflection was observed to increase as the scour depth increased to expose more of the end wall.

Water temperature

20. Water temperature in the tank most likely exhibited seasonal variations since it was not controlled and the tank was not sheltered. Although temperature was not measured during the experiment (except for one case), it is possible to obtain estimates of the water temperature for each of the respective cases (Appendix A).

Recording of Data

21. During the experiments, profile survey measurements, wave height, and other information were recorded in logbooks. Measured profiles were plotted soon after each run was completed to determine if the profile had achieved a near-equilibrium shape, i.e., if further changes would be small. Many of the plots were digitized in 1979 and the data placed on a nine-track magnetic tape for replotting by computer.[5]

22. It is believed that there were seven logbooks holding the data from all LWT experiments performed with the 0.22- and 0.40-mm sands. These logbooks also contained data for similar experiments concurrently performed in small tanks to investigate scale effects. However, only five logbooks were located in the course of preparing this report. In the present work, those profile surveys not on the magnetic tape but appearing in the available logbooks were entered into computer files in the same format as the data digitized in 1979. The format is described in Appendix C.

23. Through a combination of the three available data sources (logbooks, hand-drawn plots made during the course of the experiments, and the magnetic tape), almost all of the known profile surveys were recovered. Plots generated from the 1979 tape were visually compared to the original plots in order to verify and correct the data files. Thus, essentially all profile change data sets from the movable-bed experiments performed in the LWT in 1956-1957 and 1962 have been recovered, digitized, and verified.

24. A compilation of the associated wave data was made in the preparation of this report. There were three primary sources of data on the

incident waves: the logbooks, the paper of Saville (1957), and the report of Caldwell (1959). It is also known that the wave generator settings for cases with 0.40-mm sand were the same as those for 0.22-mm sand. The logbooks contained information on the breaking wave height and location measured during some runs; these quantities are tabulated in Appendix A.

25. Hallermeier (1987) gives a table listing values for many of the experimental parameters tabulated in this report (see also Collins and Chestnutt 1975, Seelig 1983). There are slight discrepancies with the values presented here. It is believed that values given in the present report represent the best available description of the data.

PART III: SUMMARY OF THE DATA

26. This chapter contains a summary of the data on beach profile change and wave conditions associated with the movable-bed model experiments performed in the LWT during 1956-1957 and 1962. This chapter is intended to provide sufficient background information to allow analysis of the raw profile data contained in Appendix C.

Experiment Cases

27. Profile survey data are available for nine major cases in the two experiment series performed with 0.22- and 0.40-mm sand (Table 1). A "Case" is defined as a collection of sequential profiles for a beach subjected to incident waves of specified height and period. Wave properties pertain to the horizontal section of the tank. Except for two cases (510 and 610), the initial beach profile was an approximately 1 on 15 uniform slope. Table 1 gives the case numbers and elapsed times at which the profile was measured. Total wave action typically ranged between 30 and 100 hr, and the times of the surveys are given in decimal form.

28. The numbering system for the cases is a modification of that established by Birkemeier.[6] Each case is identified by a three-digit number. The first digit gives the ordinal number of the case and identifies the incident wave conditions. Cases with the same first digit correspond to the same incident wave conditions. The second digit, if different from zero, identifies a variation performed in connection with the generic case with the same first digit and zero as the second digit. The third digit identifies the grain size used: 0 corresponds to 0.22-mm sand, and 1 corresponds to 0.40-mm sand.

Incident Wave Conditions and Water Levels

29. Wave conditions and water levels are listed in Table 2. During Case 700, the water level was decreased between profiles taken at elapsed times of 5 hr and 10 hr, probably to eliminate water loss at the sides of the tank. The water level was held at 3.81 m thereafter. Wave data appear in the logbooks in connection with a small-scale model experiment to be associated with Case 601. However, no record of Case 601 exists, and it is believed

Table 1

Cases and Times of Profile Surveys

Case No.	Number of Profiles	Time of Profile Survey hr
		0.22-mm Sand
100	7	0, 1, 5, 12, 19, 25.5, 30
110	8	0, 1, 3, 5, 12, 19.75, 25.5, 30
200	13	0, 2, 4, 6, 8, 9, 14.5, 19.5, 23.5, 28.5, 34.5, 40, 46
300	10	0, 1, 3, 5, 10, 15, 20, 30, 40, 50
400	9	0, 1, 3, 5, 10, 15, 20, 30, 40
500	15	0, 1, 3, 5, 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
510	17	0, 1, 3, 5, 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120
600	10	0, 1, 3, 5, 10, 15, 20, 30, 40, 60
610	2	0, 0.75
700	15	0, 1, 3, 5, 10, 15, 20, 30, 40, 50 60, 70, 80, 90, 100
		0.40-mm Sand
101	11	0, 1, 3, 5, 10, 12, 15, 19, 20, 25.5, 30
201	10	0, 1, 2, 3, 5, 10, 15, 20, 30, 40
301	10	0, 1, 3, 5, 10, 15, 20, 30, 40, 50
401	12	0, 1, 3, 5, 10, 15, 20, 30, 40, 50 60, 66
501	11	0, 1, 3, 5, 10, 15, 20, 30, 40, 50, 60
701	15	0, 1, 1.42, 3, 4.25, 5, 7.07, 10 12.73, 15, 20, 27.58, 30, 33.23, 40
801	10	0, 1, 3, 5, 10, 15, 20, 30, 40, 50
901	13	0, 1, 3.1, 6.2, 9.3, 12.4, 15.5, 23.8, 31, 34.1, 37.57, 40.3, 49.6
911	12	0, 1, 3.1, 6.2, 9.3, 12.4, 15.5, 24.8, 31, 34.1, 37.2, 40.3

Table 2

Wave Height, Wave Period, and Water Depth in Horizontal Section of the Tank

Case No.	Wave Height m	Wave Period sec	Water Depth m	Deepwater Wave Steepness
		0.22-mm Sand		
100	1.28	11.33	4.57	0.0054
110	1.28	11.33	4.57	0.0054
200	0.55	11.33	4.57	0.0023
300	1.68	11.33	4.27	0.0070
400	1.62	5.6	4.42	0.0351
500	1.52	3.75	4.57	0.0750
510	0.61	16.0	4.57	0.0011
600	0.61	16.0	4.57	0.0011
610	1.83	16.0	4.57	0.0033
700	1.62	16.0	4.11 (3.81)*	0.0028
		0.40-mm Sand		
101	1.28	11.33	4.57	0.0054
201	0.55	11.33	4.57	0.0023
301	1.68	11.33	4.27	0.0070
401	1.62	5.6	4.42	0.0351
501	1.52	3.75	4.57	0.0750
601	0.61	16.0	4.57	0.0011
701	1.62	16.0	3.81	0.0028
801	0.76	3.75	4.57	0.0377
901	1.34	7.87	3.96	0.0129
911	1.34	7.87	3.96**	0.0129

* Water level decreased between 5 hr and 10 hr.
** Mean of varying depth between 3.5 m and 4.4 m.

that this case was never performed in the LWT because profile change in Case 600 was highly accretionary, and main interest of the 1962 experiment was in erosion. For Case 911, a tidal cycle with a period of approximately 12 hr was simulated; the water depth ranged between 3.5 and 4.4 m, giving an average depth of 3.96 m, equal to that used in Case 901.

30. The deepwater wave steepness values listed in Table 2 were calculated as the ratio of deepwater wave height and deepwater wavelength $(gT^2/2\pi)$*, where g is acceleration of gravity and T is wave period. The deepwater wave height was obtained by conversion of the wave height measured in the uniform-depth section according to linear wave theory. Deepwater wave steepnesses vary by a factor of about 70.

Profile Morphology

31. The profile was surveyed frequently during the initial stage of each case to record the rapid change that occurred. The time interval between profile surveys was determined through judgment of the rate of profile change and the approach to equilibrium. The judgment was made by plotting profiles soon after measurement and comparing relative changes. Therefore, intervals between profile surveys differ for individual cases. The approach to equilibrium is quantitatively examined in Part IV.

32. General characteristics of the final (near-equilibrium) profile reached for each of the 15 generic cases are listed in Table 3. These and the developing profiles are displayed in Appendix B. Here, an erosional profile is defined as a profile exhibiting a notable bar, and an accretionary profile is defined as a profile exhibiting a notable berm. Of the 15 generic cases, eight terminated with erosional profiles (Cases 100, 300, 400, 500, 700, 401, 501, and 901) and seven terminated with accretionary profiles (Cases 200, 600, 101, 201, 301, 701, and 801), although little net change occurred in Case 801.

Breaking Wave Characteristics

33. A summary of available information on the breaking waves is listed in Table 4. The location of the break point is calculated as the distance

* For convenience, symbols and abbreviations are listed in the Notation, Appendix D.

Table 3
Major Morphologic Features Exhibited by the 15 Generic Cases

Case No.	Morphologic Characteristics of Final Profile
	0.22-mm Sand
100	Bar, inshore step
200	Berm, step, double bar; bars join together
300	Inshore step, bar trough, double bar; bars join together
400	Inshore step, bar trough, bar
500	Inshore step, bar trough, separated bars
600	Berm, inshore step
700	Inshore step, double bar; bars join together
	0.40-mm Sand
101	Berm, short inshore step, bar
201	Berm
301	Berm, bar trough, bar
401	Bar
501	Inshore step, bar
701	Berm
801	Berm, small bar
901	Berm, inshore step, double bar; bars join together

Table 4

Summary of Breaking Wave Data

Case No.	No. of Values	Average Breaking Wave Height m	Most-Landward Location m	Most-Seaward Location m
		0.22-mm Sand		
100	NA	1.7	NA	NA
110	NA	1.7	NA	NA
200	NA	1.1	NA	NA
300	10	2.0	33	42
400	10	2.3	NA	NA
500	12	1.9	30	63
510	8	1.0	16	25
600	8	1.1	14	16
610	NA	NA	NA	NA
700	11	2.1	32	50
		0.40-mm Sand		
101	41	1.8	23	29
201	49	1.9	20	23
301	30	2.4	28	34
401	48	2.4	28	42
501	47	1.6	36	48
701	40	2.0	27	34
801	45	0.8	11	15
901	54	2.0	29	42
911	NA	NA	NA	NA

Note: Notation NA indicates data not available. Horizontal distances referenced from initial still-water shoreline.

from the initial position of the still-water shoreline. The breaking wave height and location of the break point as a function of elapsed time are given in Appendix A.

34. In Case 500 the breaking wave height was twice measured at a secondary breaking position in the surf zone. The average height of the secondary

breaker was 1.1 m, and it was located 15-20 m from the position of the initial still-water shoreline (Table A3). Similarly, in Case 501, the breaking wave height was measured 17 times at a secondary breaking position. The average secondary breaking wave height was 0.8 m, and the breaker was located 5-8 m from the initial still-water shoreline (Table A12).

Variations and Exceptions

35. Information on case variations and exceptions is collected in this section. The initial profile (0 hr) for Case 510 was essentially the same as the final profile (100 hr) from Case 500. In going from Case 500 to Case 510, wave height and period were changed from 1.52 m and 3.75 sec to 0.61 m and 16.0 sec, with the water depth held the same in order to determine if the after-storm recovery process observed in the field would occur. The eroded profile produced by steep waves in Case 500 underwent partial recovery under the low steepness waves of Case 510.

36. The initial profile (0 hr) for Case 610 was essentially the same as the final profile (60 hr) for Case 600. In going from Case 600 to Case 610, wave height was increased from 0.61 m to 1.83 m, while holding the wave period and water level fixed, to determine if the accretionary profile would erode under higher waves. This increase in wave height tripled the value of the wave steepness and produced erosion of the near-equilibrium profile established in Case 600.

37. Wave height and period were the same for Cases 901 and 911, but the water level in Case 911 was cyclically varied in a stepwise fashion with an approximate 12-hr period to simulate a tide (Table A19). The objective of this case was to determine if the varying water level would smooth the profile as compared to a fixed level. This effect was observed. Water level ranged between 3.5 and 4.4 m to give the mean still-water level of 3.96 m used in Case 901.

38. The same wave conditions were used in Cases 110 and 100 to verify reproducibility of the generated profile change; good agreement was found. In both cases, the profile eroded to the end of the tank and reflection increased.

PART IV: REPRESENTATIVE CHARACTERISTICS OF THE DATA SET

39. This chapter notes general trends and representative characteristics of the data set on profile change obtained with the LWT. Emphasis is placed on time evolution of selected properties of bars and berms.

40. First, the procedure used to define morphologic features of bars and berms is described. Secondly, profile types are classified as being either bar or berm, and a criterion for distinguishing these limiting profile shapes is developed in terms of the deepwater wave steepness and a dimensionless sand grain fall velocity parameter. Such a criterion can be used directly as a predictor of beach erosion and accretion. Examples of the time evolution of selected bar and berm features are also given. The chapter concludes with a discussion of the net cross-shore sand transport rate along the profile and the associated transport rate distributions.

41. For the analysis, each profile was expressed in a cubic spline representation, resulting in approximately 75 polynomials per profile. This representation facilitated numerical evaluations and gave a continuous mathematical description of the profile. Only those cases involving plane initial beach slopes (all cases except Cases 510 and 610) were used to allow direct interpretation and intercomparison of results.

42. Numerical values are expressed in metric units. It is emphasized that the original profile survey data listed in Appendix C are given in US customary units, i.e., distances are expressed in feet.

Definition of Bars and Berms

43. In a qualitative sense, bars and berms are readily identifiable features associated with local regions of deposition along the beach profile. Figure 5 is a definition sketch for the nomenclature associated with bars and berms that is employed in this chapter.

44. No commonly accepted procedure exists for defining bars and berms in a quantitative manner. For the purpose of making calculations, bars and berms and their associated properties were defined with respect to the initial profile. This procedure provided an unambiguous interpretation of quantities such as bar/berm volume and height and gave results compatible with the intuitive picture of bars and berms as depositional features.

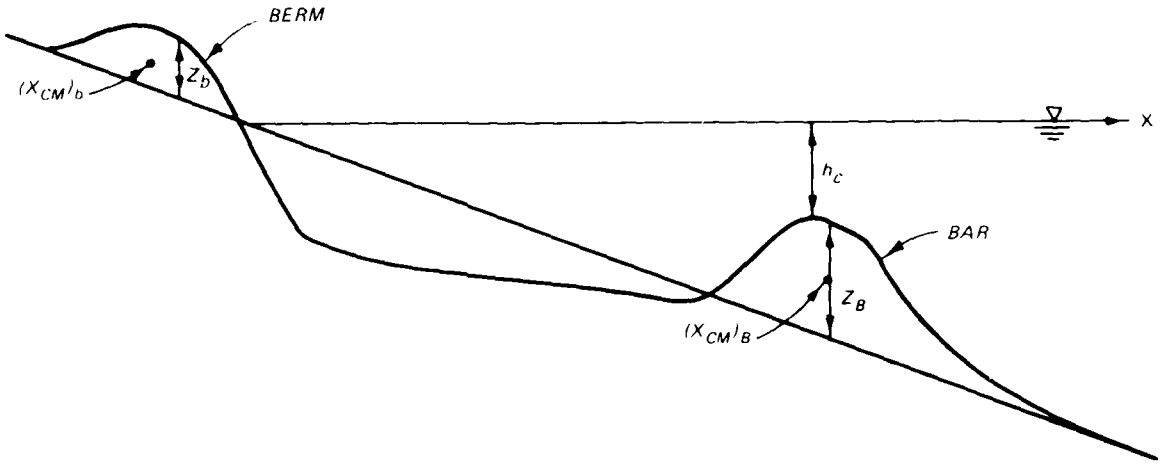

Figure 5. Definition sketch for bar and berm features

45. In the various cases, a bar formed if material was deposited in the offshore region of the profile (main direction of sand transport offshore), whereas a berm formed if material was deposited on the foreshore (main direction of sand transport onshore). A more thorough discussion of beach profile morphology and its relation to the controlling wave and sediment parameters is given by Larson and Kraus (1988a). They used data presented in this report together with data from an independent experiment performed at the Central Research Institute for Electric Power Industry (CRIEPI) involving another large wave tank (Kajima et al. 1983).

Classification of Bar and Berm Profiles

46. The response of the beach profile to the waves incident upon it may be classified according to whether material is mainly transported offshore to create a bar or transported onshore to create a berm. In the process of bar formation, the foreshore erodes and the shoreline typically retreats, whereas in berm formation the foreshore accretes and the shoreline advances.

47. Criteria have been previously proposed to classify beach profile response as bar-type (erosional) or berm-type (accretionary). Here, a new classification scheme is presented which is based solely on data obtained from profile change generated in the LWT and in the more recent CRIEPI experiments performed in Japan (Kajima et al. 1983). The agreement in trends of the data obtained with the LWT and the CRIEPI experiments performed with modern

instrumentation lends credibility to the data set obtained with the LWT. In this report data obtained with the LWT will be identified by the notation "CE," signifying the US Army Corps of Engineers.

48. Figure 6 displays the response of the beach profile type classified as bar or berm in the various cases as a function of the deepwater wave steepness H_o/L_o and a dimensionless sand fall velocity parameter H_o/wT in which

H_o = deepwater wave height, m

L_o = deepwater wavelength, m

w = sand fall velocity, m/sec

T = wave period, sec

Beach profile types were visually classified as either bar or berm according to the dominant tendency appearing in the plots (Appendix B). For example, if a small breakpoint bar was present on a profile which showed a strong berm buildup (onshore sand transport) during most of the run, the profile type was

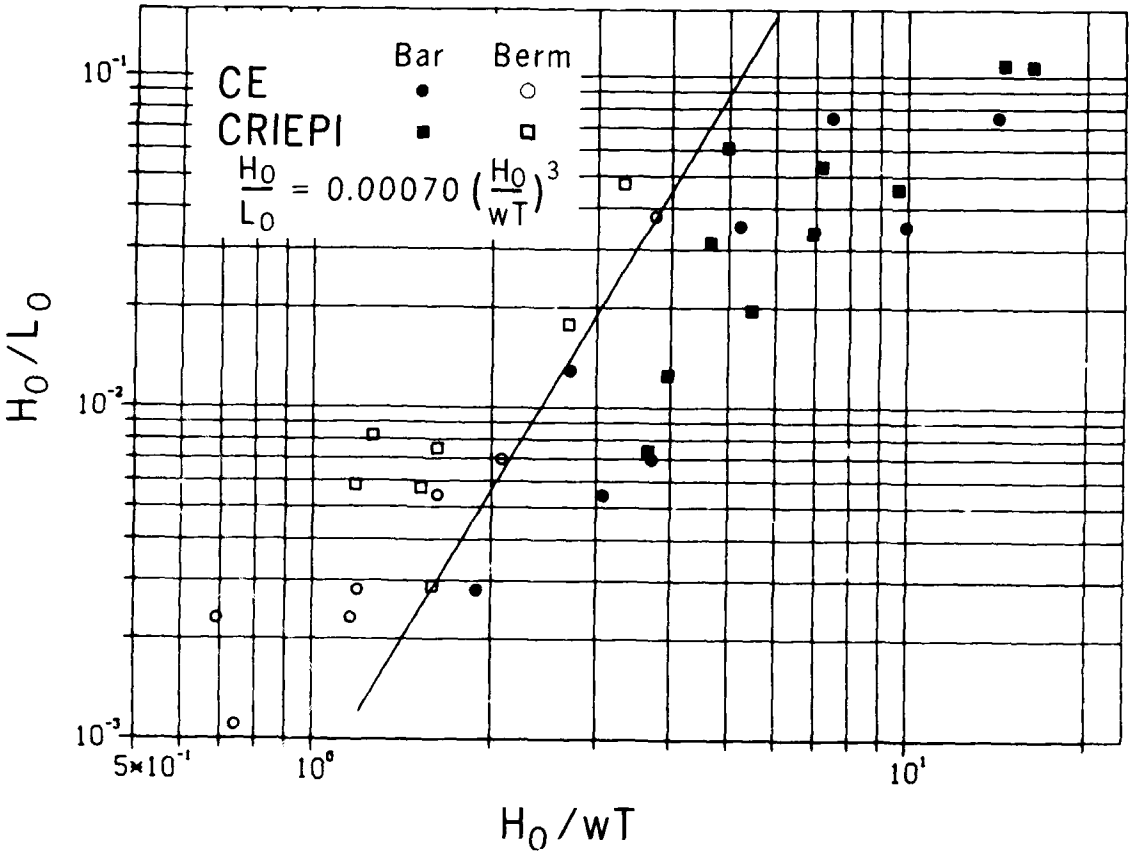

Figure 6. Criterion for distinguishing bar and berm profiles by use of the deepwater wave steepness and dimensionless fall velocity

designated as berm. The solid line in Figure 6, drawn so as to separate regions corresponding to bar and berm profiles, is described by the following equation:

$$\frac{H_o}{L_o} = 0.00070\left(\frac{H_o}{wT}\right)^3 \qquad (1)$$

Larson and Kraus (1988a) investigate several other previously proposed criteria for predicting profile response as a function of wave and sand characteristics. Kohler and Galvin[7] had previously used the fall velocity parameter in an attempt to develop a bar/berm predictive criterion for the CE data set.

Bar Evolution

49. Various geometric properties pertaining to bar features were calculated. These properties showed similar development in time, namely an initially rapid response followed by a decrease in the rate of response with approach to an equilibrium value. In the data set, 13 cases exhibited some degree of bar formation, although only eight cases were classified as bar profiles. The remaining five cases were characterized by accretion on the foreshore, i.e., berm buildup.

Bar volume

50. Evolution of bar volume through time is illustrated in Figure 7 for the 13 cases judged to exhibit a main breakpoint bar. Bars that developed on profiles which predominantly accreted on the foreshore (onshore sand transport) had smaller volumes than bars formed on profiles where offshore transport predominantly occurred. Also, equilibrium bar volume on berm profiles was reached much faster than on bar profiles, in most cases by the first profile survey. Examples of such rapid bar buildup are Cases 101, 301, and 801. Larson and Kraus (1988a) discuss the time evolution of bar volume and relate it to incident wave parameters and sand characteristics.

51. Note in Figure 7 that bar volume evolution is similar for Case 901 and the corresponding case with water level variation (Case 911). In some cases, if a second bar formed shoreward of the main breakpoint bar, the two bars tended to grow together, appearing to hinder development of the main breakpoint bar. Examples are Cases 300 and 700.

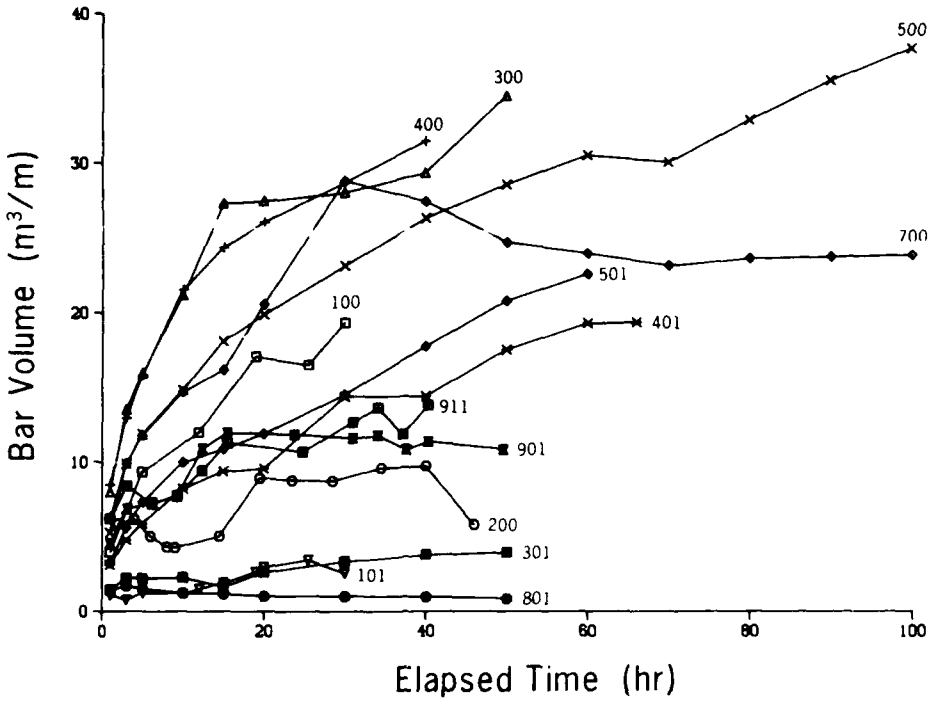

Figure 7. Growth of bar volume through time

Maximum bar height

52. Maximum bar height Z_B on a given profile was defined as the maximum difference in elevation within the domain of the bar between the profile and the initial profile (see Figure 5). The location of Z_B along the profile did not necessarily coincide with the location of the bar crest, the point on the bar where water depth is a minimum; however, Z_B was always close in value to the bar crest height. Figure 8 illustrates the growth of Z_B with elapsed time for the 13 cases. The time evolution of maximum bar height was similar to evolution of bar volume. However, equilibrium was achieved more rapidly for maximum bar height since most of the curves in Figure 8 are relatively horizontal toward the end of the run.

53. Comparison between Cases 901 and 911 shows the influence of water level variation on maximum bar height. In Case 911 (variable water level), the trend of the maximum bar height is to increase with time toward an equilibrium value but with a superimposed fluctuation that is approximately in phase with the water level variation. The corresponding Case 901, with a fixed water level, shows a regular development of maximum bar height toward an equilibrium value of approximately 1 m.

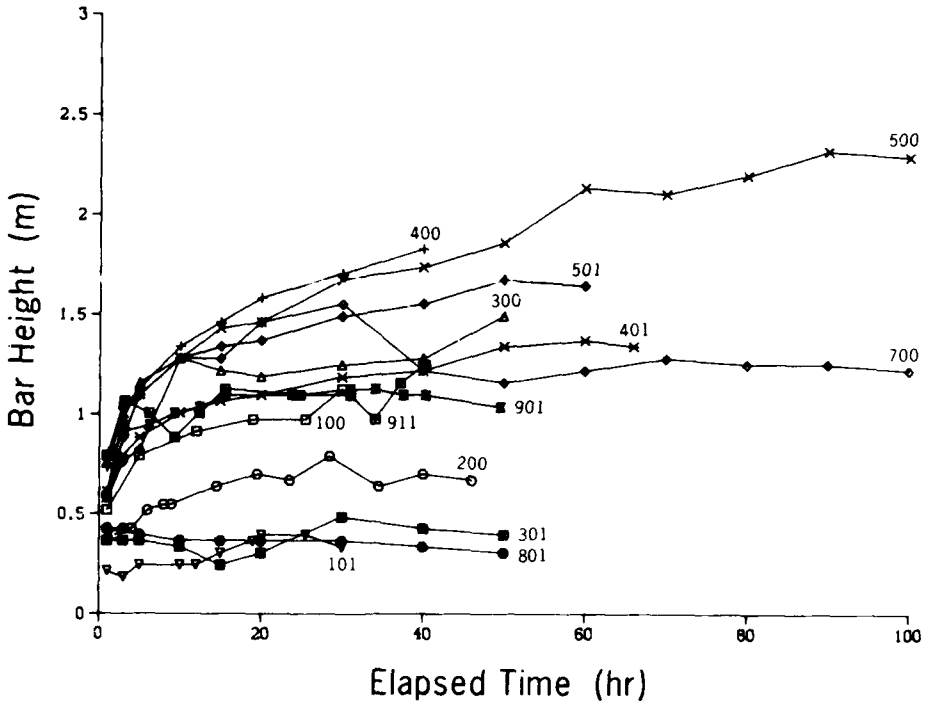

Figure 8. Growth of maximum bar height Z_B through time

Depth at the bar crest

54. Depth at the bar crest h_c was almost constant throughout a run, as seen in Figure 9. In some cases, h_c underwent an abrupt change (for example, Case 200), caused by a second bar located inshore that grew and merged with the main breakpoint bar. Thus, although main breakpoint bars moved considerably offshore, they simultaneously grew in size, with the result that the depth at the bar crest remained unchanged. Even the test with a varying water level (Case 911) showed an approximately constant depth over the bar crest during the course of the run, indicating that there was little time lag between the change in water level and response of the profile. In Figure 9, h_c appears to vary for Case 911 because of the use of a fixed origin that was located at the initial still-water shoreline.

Bar location and movement

55. For cases that exhibited significant erosion, the main breakpoint bar usually translated offshore with time. As a convenient measure of the location of the main breakpoint bar, the position of the bar center of mass with respect to the initial still-water shoreline was calculated. Figure 10 displays the horizontal location of the bar center of mass as a function of

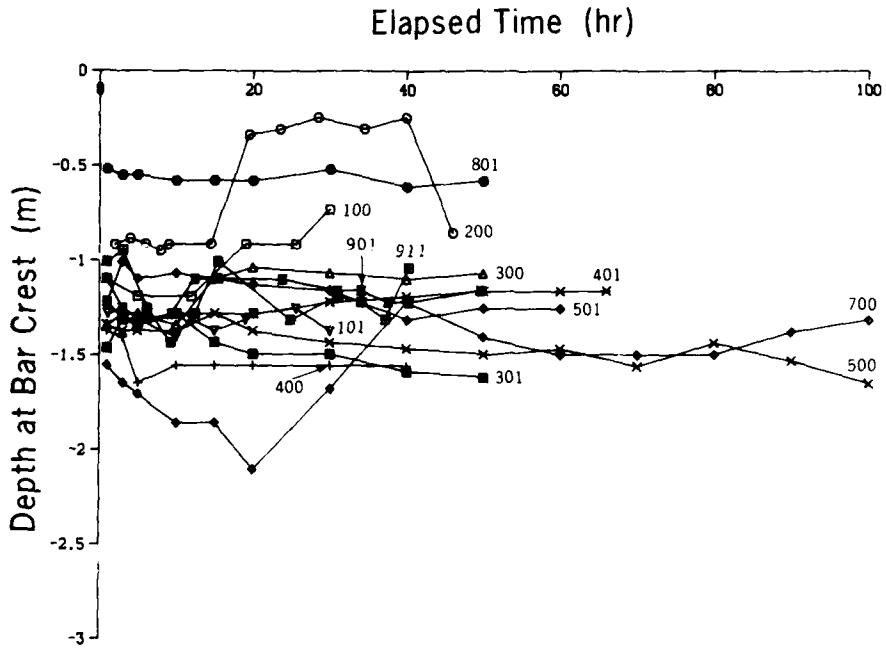

Figure 9. Behavior of depth at bar crest h_c through time

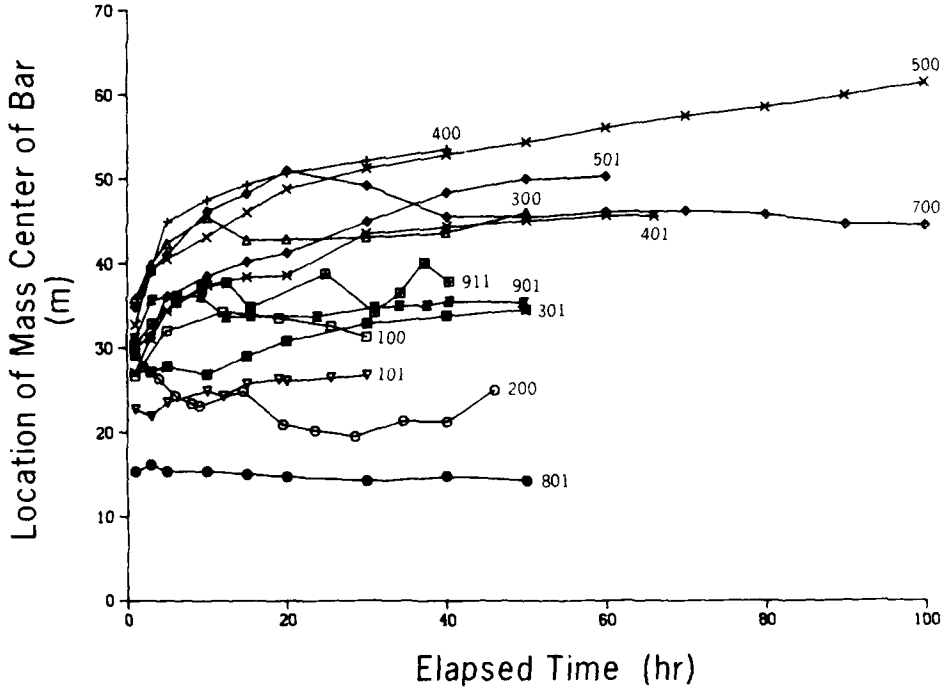

Figure 10. Location of bar center of mass $(X_{CM})_B$ through time

time. The greatest movement occurred for cases with the finer grain size (0.22 mm) and larger values of deepwater wave steepness (Cases 400 and 500). Breakpoint bars that developed on accretionary profiles were almost stationary (Cases 101 and 801).

56. The speed of bar migration calculated from movement of the bar center of mass is plotted as a function of time in Figure 11 for those cases having significant offshore bar movement. In the beginning of a run the response of the profile was rapid, marked by high speeds of bar migration (on the order of 1-3 m/hr); however, bar migration speed decreased considerably after about 10 hr. In Case 911, the bar cyclically moved onshore and offshore with increase and decrease in water level. Case 100 showed onshore movement, probably because the profile eroded back to the end of the tank; exposure of the wall gave rise to reflection of the incident waves and scour, changing the wave conditions and shape of the bar.

57. For calculation of the speed of bar migration, the main breakpoint bar was considered. If a second bar formed inshore and joined with the main breakpoint bar, only the estimated original seaward most part was used.

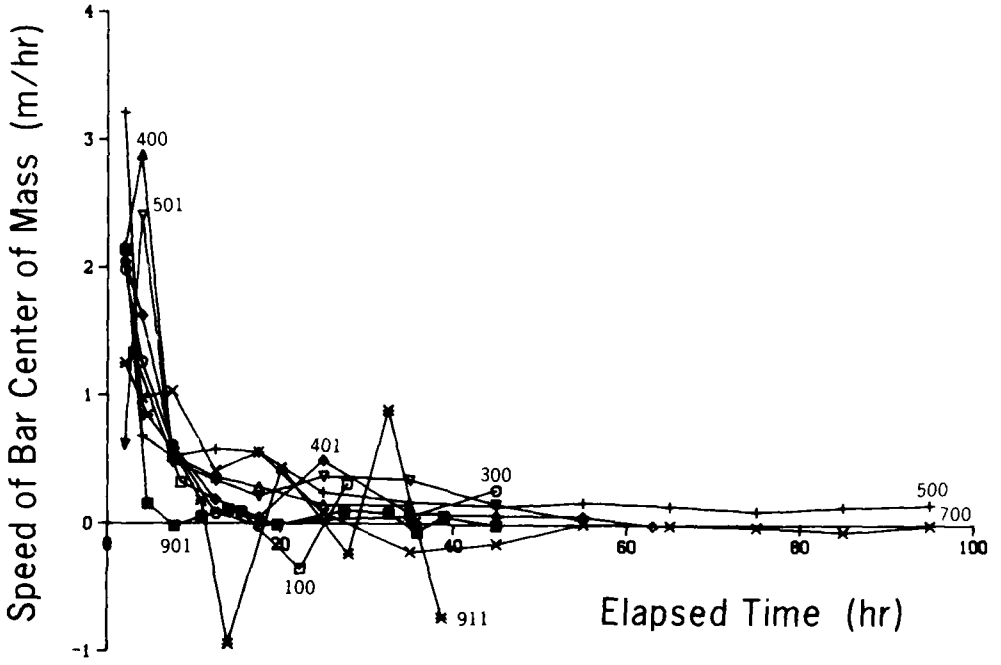

Figure 11. Speed of bar center of mass $(X_{CM})_B$ through time

Berm Evolution

Volume

58. Six cases showed considerable berm buildup, fewer than the eight cases in which breakpoint bars formed (although Case 801 was classified as accretionary, little net change occurred; therefore this case was not included in Figure 12). The same types of calculations performed for breakpoint bars were conducted to determine berm properties. Figure 12 illustrates growth of berm volume with time for the six cases. Cases 200 and 600, exhibiting relatively small berm buildup, rapidly reached equilibrium berm volume. Berm volume was defined with respect to the initial profile in a manner analogous to breakpoint bar volume.

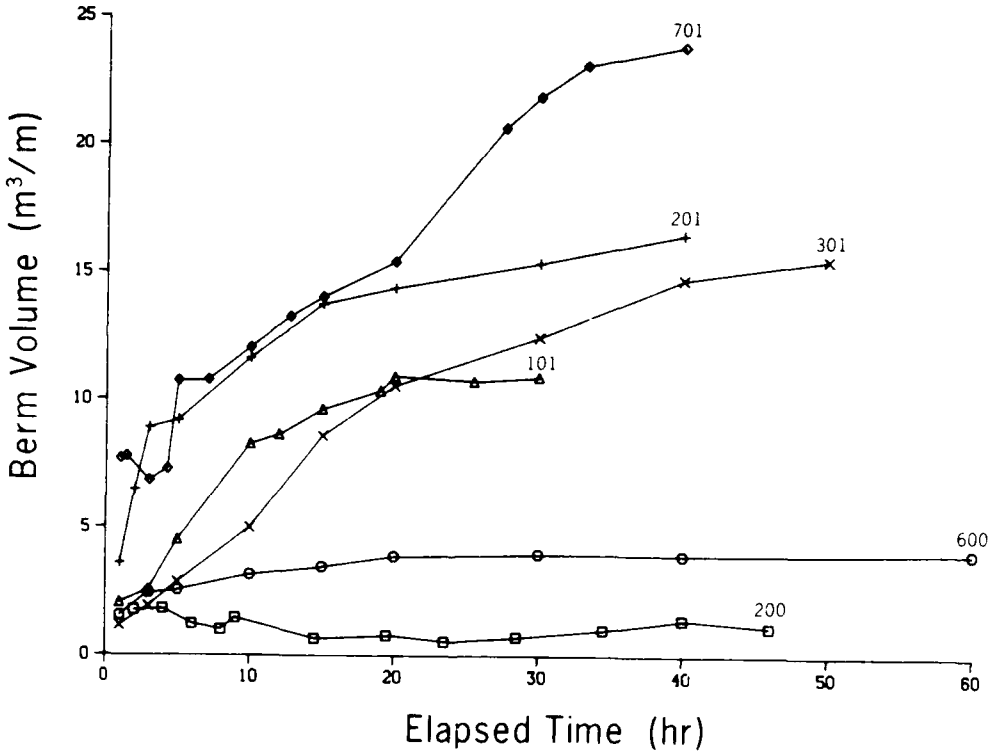

Figure 12. Growth of berm volume through time

Height

59. The time evolution of maximum berm height Z_b above the initial profile is displayed in Figure 13. Case 701 initially showed a decrease in maximum berm height, with a minimum occurring at the elapsed time of 5 hr. In this case a large berm rapidly formed and exhibited steep shoreward and

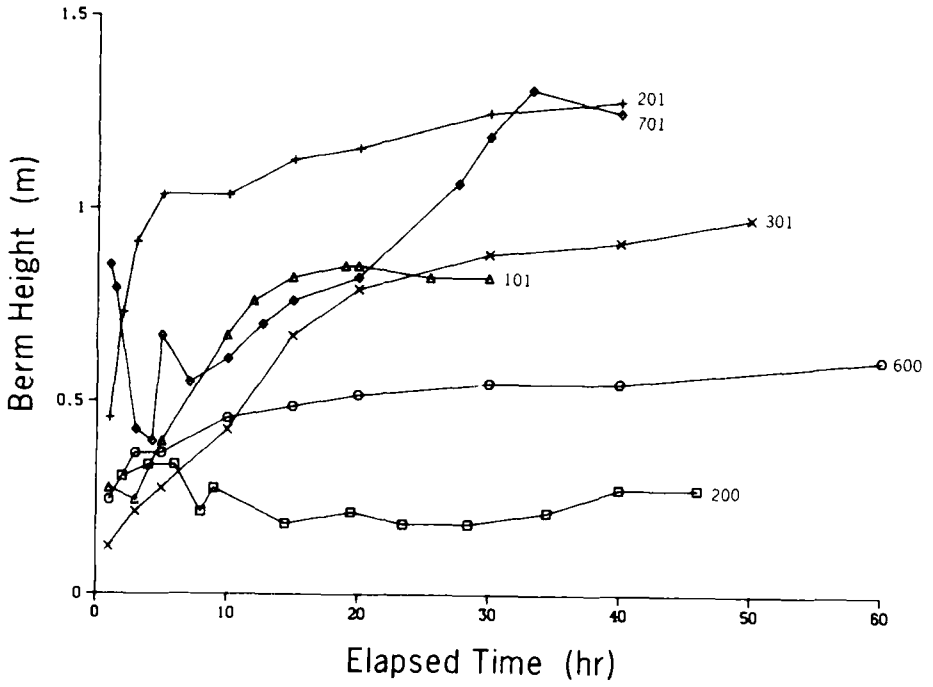

Figure 13. Behavior of maximum berm height Z_b through time

seaward slopes at the first profile survey. However, at succeeding profile surveys, the face slope on the berm became more gentle, and the foreshore accreted over a greater horizontal extent. Data recorded in the logbooks indicate that the breaking wave height varied appreciably during the earlier part of the run, with higher waves in the first few hours followed by smaller waves before the wave height became stable (cf. Appendix A, Case 701). The reason for this variation in wave height is not known.

Location

60. The horizontal location of the berm center of mass was relatively constant with time, with only some cases showing slight berm movement during the initial phase of the run (Figure 14). In Case 701, the change in shape of the berm due to changing wave conditions caused the berm center of mass to move rapidly during the first 5 hr. In Cases 101 and 301, there was a small seaward translation of the berm center of mass during the first 10 hr.

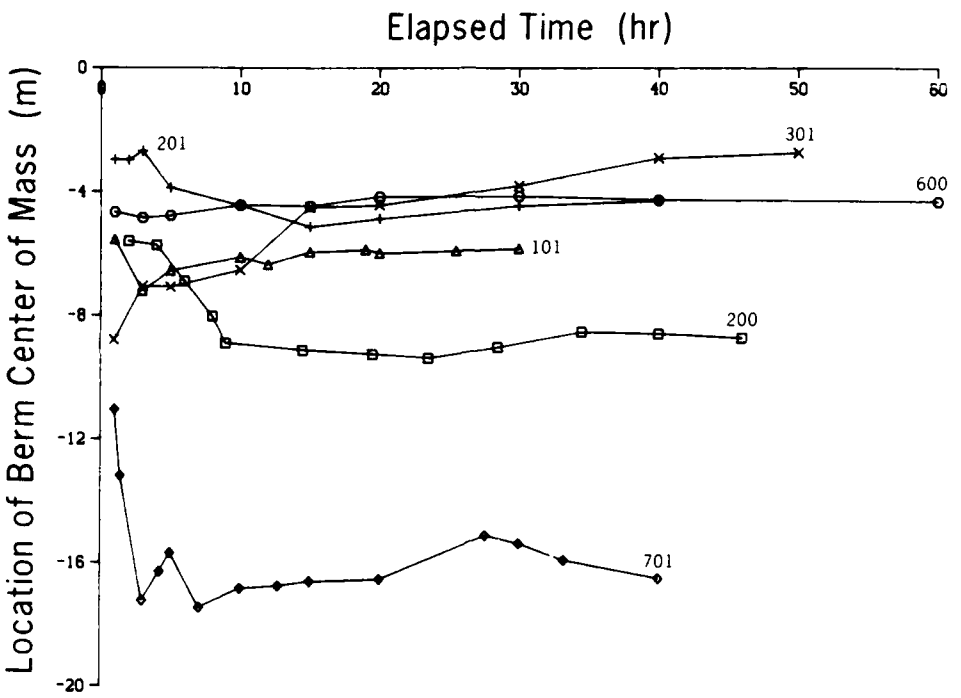

Figure 14. Location of berm center of mass $(X_{CM})_b$ through time

Net Cross-Shore Sand Transport Rate

61. Integration of the equation of sand conservation along the profile between two surveys yields the net cross-shore transport rate that occurred between them:

$$q(x) = \int_{x_o}^{x} \frac{h_2(x) - h_1(x)}{t_2 - t_1} \, dx \qquad (2)$$

in which

$q(x)$ = cross-shore sand transport rate, $m^3/m/sec$

x = horizontal coordinate with origin at the initial still-water shoreline, m

x_o = location at which no profile change occurred, m

$h_2(x)$ = depth along the profile at time t_2, m

$h_1(x)$ = depth along the profile at time t_1, m

t_2 = time of later profile survey, sec

t_1 = time of earlier profile survey, sec

In arriving at Equation 2, it was assumed that sand porosity was constant across the profile.

62. By using the initial and final profiles from each case, the total net cross-shore sand transport rate can be obtained, which in a gross sense illustrates how material was redistributed over the profile in the approach to an equilibrium shape. Larson and Kraus (1988b) classified such distributions of the net cross-shore transport rate derived from experiments performed with large wave tanks, and three principal shapes were identified. Most of the cases listed in Table 2 had unipeaked distributions and exhibited either offshore-directed or onshore-directed sand transport along the active profile. Only a few cases exhibited multiple peaks of opposite sign, and one peak was always dominant, except for Case 801 which had two peaks of about the same magnitude. In Case 801 the initial profile was almost stable under the incident waves, and little net transport took place.

63. Figure 15 shows two typical distributions of the total net cross-shore transport rate calculated from initial and final profile surveys, one illustrating bar formation (Case 500) and the other berm buildup (Case 301). Offshore-directed sand transport is positive, since the origin of the coordinate system is located at the initial still-water shoreline and the horizontal axis points positive offshore.

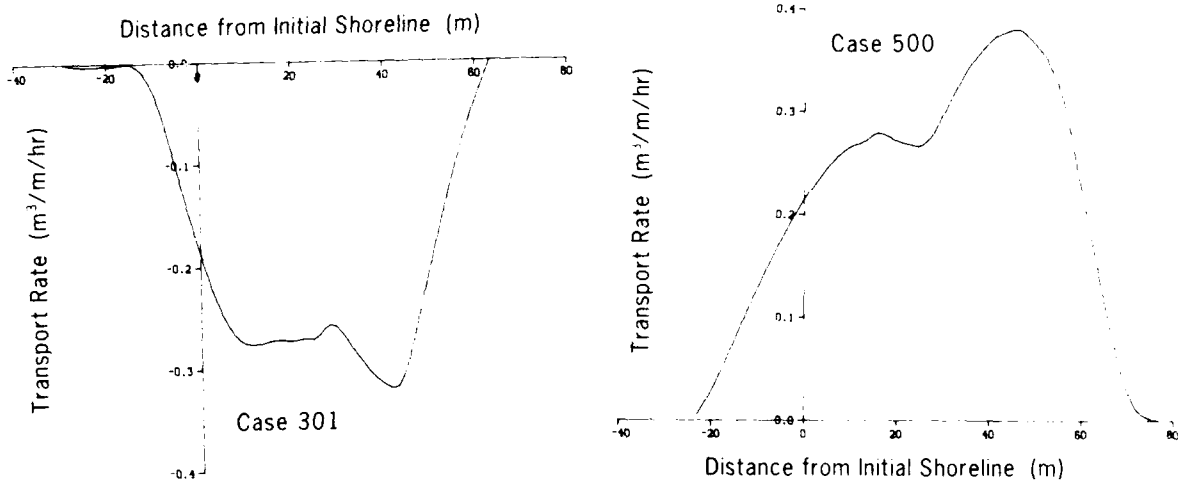

Figure 15. Examples of total net cross-shore sand transport rate distributions, Cases 301 and 500

64. The time evolution of the net cross-shore sand transport rate was obtained by integrating the sand conservation equation between consecutive profile surveys. Figures 16 and 17 illustrate typical features of the time evolution of the transport rate distribution for an erosional profile (Case 400) and an accretionary profile (Case 201). These distributions, arising from shorter time intervals, exhibit more complex patterns than distributions calculated from initial and final profiles, for which the relative effect of transient transport processes is reduced. The positive-peaked (Figure 16) and negative-peaked (Figure 17) transport rates in the distributions for erosional and accretionary profiles, respectively, were located somewhat shoreward of the break point. In cases having bar development, the location of the peak offshore transport rate moved seaward together with the break point. In berm development cases, the location of the peak onshore transport rate was approximately stationary with time because the break point moved very little.

65. The magnitude of the transport rate distributions decreased rapidly with time, as seen in Figures 16 and 17. The peak transport rate was an order of magnitude smaller for the latest distribution as compared to the earliest distribution. Properties of the net transport rate distributions are discussed by Larson and Kraus (1988b).

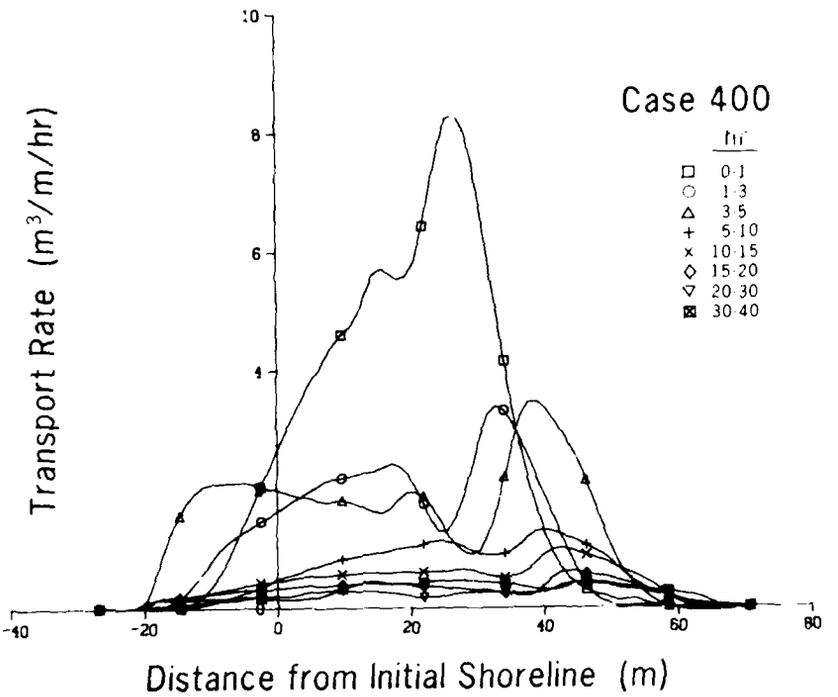

Figure 16. Time evolution of net cross-shore sand transport rate distribution for Case 400, erosional case

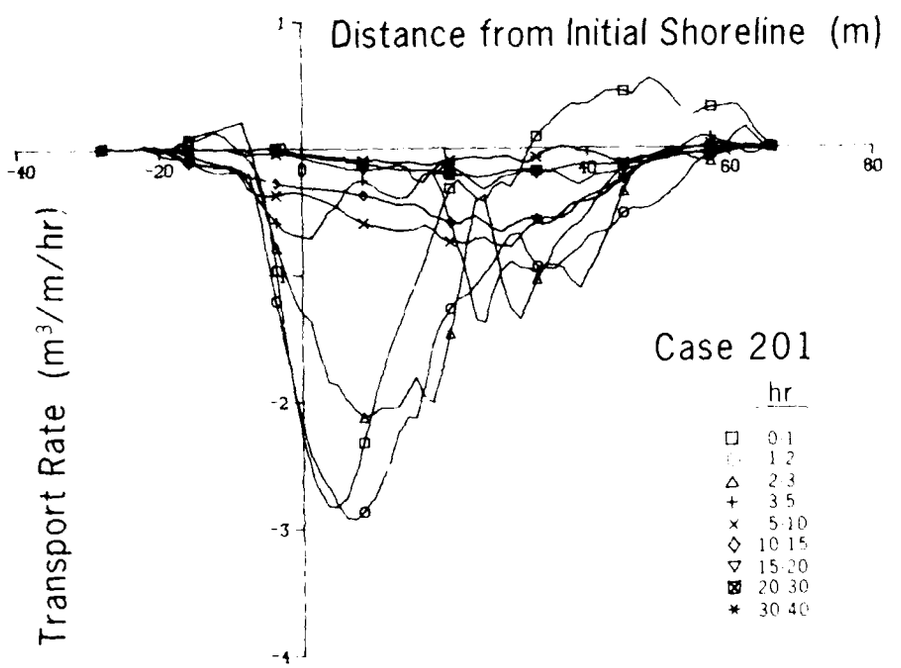

Figure 17. Time evolution of net cross-shore sand transport rate distribution for Case 201, accretionary case

ENDNOTES

1. G. W. Simmons, personal communication, December 1986. Much of the information in this section was provided by Mr. Simmons, formerly Engineering Technician, Research Division, BEB and CERC, who directly performed many of the movable-bed model tests in the LWT.

2. Saville (1957), who reported on four cases with the 0.22-mm sand, states that "... the wave heights varied appreciably (about +/- 20 %) with time and with distance along the tank due to reflections off the beach, and the change in this reflection pattern with changes in the beach profile. The heights ... are considered representative averages." The first tests done by Saville included Cases 100 and 110, in which the profile eroded to reach the end wall of the tank, producing notable reflection.

3. Saville has subsequently stated that most of the variation in wave height was probably produced by changes in the beach profile which changed reflection characteristics of the beach (Saville, personal communication, March 1987).

4. G. W. Simmons, personal communication, December 1986.

5. W. A. Birkemeier, "Data for Model Scale Effects Test," unpublished letter to Saville, US Army Corps of Engineers, Coastal Engineering Research Center, 1980.

6. Birkemeier, ibid.

7. R. R. Kohler, and C. J. Galvin, "Documentation of the Dimensionless Fall-Time Parameter used for Berm/Bar Prediction in SPM Chapter 4," unpublished Memorandum, US Army Corps of Engineers, Coastal Engineering Research Center, 1973.

8. W. N. Seelig, "Transmittal of Laboratory Notebooks on Large Wave Tank Equilibrium Tests Conducted in 1956-1957 and 1962," unpublished Memorandum, US Army Corps of Engineers, Coastal Engineering Research Center, 1981.

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APPENDIX A: SUPPLEMENTARY DATA

1. This appendix contains supplementary data and background information associated with the movable-bed tests performed in the LWT.

Breaking Wave Data

2. Tables A1-A15 list breaking wave height and location transcribed from the logbooks, together with the time of measurement for all generic cases (except Cases 100 and 200), for which the logbooks were missing. Table 1 in Saville (1957) lists average wave conditions for four cases which can be identified as Cases 300, 100 (and 110), 200, and 400 reading from top to bottom on that table. The average breaking wave height for Case 100 was given as 5-6 ft and that for Case 200 as 3-4 ft. Values for Case 100 in Table 1 of Saville (1957)* are denoted as the average of two tests, i.e., the average for Case 100 and Case 110. Comments in quotation marks were transcribed directly from the logbooks.

Table A1

Case 300: Breaking Wave Data

Time		Height	Location
hr	min	ft	ft
0	45	7.0	108
3	10	7.5	126
11	00	6.3	136
14	20	6.0	134
21	00	7.0	138
23	05	6.5	134
25	00	6.5	138
33	35	6.7	--
34	00	6.0	--
36	05	5.8	--

* References cited in the appendix can be found in the reference list at the end of the main text.

Table A2

Case 400: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	05	7.5	--
0	55	7.5	--
1	30	7.0-8.0	--
1	55	7.0	--
5	10	7.0-8.0	--
10	20	7.0-8.0	--
15	05	7.5	--
20	10	7.5	--
30	10	7.5	--
38	15	7.5	--

Table A3

Case 500: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	15	--	104-108
1	10	6.0	98-116
3	10	6.0	118-126
11	25	6.0	128-134
20	15	6.0-6.5	140-148
27	00	6.0	148-156
32	00	6.0	153-158
46	00	6.5	160-168 (48)*
55	00	6.0-6.5	166-174 (48)
62	00	6.0-6.5	174-182 (48)
70	30	6.0-6.5	186-194 (48)
80	30	6.0-6.5 (3.0-3.5)	186-194 (48)
95	00	6.0-7.0 (3.0-5.0)	198-206 (56-66)

* Information on second break point given in parentheses.

Table A4

Case 510: Breaking Wave Data

Time		Height	Location
hr	min	ft	ft
1	10	2-3	54
3	15	2-3	56
4	55	2-3	60
9	45	2.5-3.5	70-74
20	10	2.5-3.5	72
45	00	3.0-3.5	70-74
95	00	4.0-4.5	--
105	00	5.0-5.5	78-82

Table A5

Case 600: Breaking Wave Data

Time		Height	Location
hr	min	ft	ft
1	10	3.5-4.5	48-54
2	00	4.0	48-54
14	00	4.0	46
16	00	3.5-4.0	48-54
20	20	3.5-4.0	48-54
30	10	3.0-3.5	48-54
36	00	3.5-4.0	48-54
40	15	3.6	50-54

Table A6

Case 700: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
1	10	7-8	106-112
3	10	7-8	112-116
6	00	7.5-8.5	136-156
7*	00	--	162-164
15	00	8-9	142-154
22*	00	7-8	140-152
35	00	5.5-6.5	140-150
40	15	5.5-6.5	146-156
45	00	5.5-6.5	140-150
50	15	6-7	146-156
56	00	--	152-156
61	00	5-6	150-156
80	15	5-6	146-156

* Between 5-10 hr, 0.9 ft of water removed from the tank.

** "During 20-30 hr, the wave height was greatly decreased (after reflection). This seemed to have a great effect on the profile (see 40-hr profile)."

Table A7

Case 101: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
1	05	5.8	82
2	35	5.6	77
3	10	6.0	76.5
5	00	6.0	81
5	30	6.0	83
6	00	6.5	83
6	30	7.0	86
7	00	7.0	86
7	30	6.5	86
8	00	6.5	86

(Continued)

Table A7 (Concluded)

Time hr	Time min	Height ft	Location ft
8	30	5.5	87
9	00	5.5	87
9	35	5.5	87
10	00	5.5	86
10	30	5.5	86
11	00	6.0	85
11	25	5.5	87
12	15	6.0	88
13	00	5.8	88
13	50	5.7	87
14	50	5.7	91
15	00	5.4	90.5
15	55	6.2	93.5
16	40	6.0	93
17	10	5.5	93
18	20	5.5	92
18	45	5.5	92.5
19	10	5.5	92.5
20	10	6.0	95
20	35	6.0	95
21	05	6.0	95
21	30	6.0	94
22	00	6.0	94
22	30	6.0	94
23	00	5.5	94
23	30	5.5	94
24	00	6.0	92
25	15	6.2	91
26	35	6.4	93
27	10	6.3	92
29	20	6.1	94

Table A8

Case 201: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	15	5.0	72
0	35	4.5	68
1	00	4.5	69
1	40	6.5	68
2	00	6.5	68
3	00	7.0	70

(Continued)

Table A8 (Concluded)

Time		Height	Location
hr	min	ft	ft
4	10	6.0	74
6	00	7.0	65
8	10	5.4	64
9	20	6.2	71
9	45	6.4	69
10	10	6.6	72
10	50	7.0	71
11	10	7.0	72
11	40	7.2	70
12	20	7.0	69
12	33	6.6	69
13	10	6.2	69
13	55	6.2	68
14	40	6.5	70
15	15	6.0	71
16	10	6.3	72
17	23	6.2	70
18	00	6.5	70
18	45	6.1	66
19	10	6.5	69
19	40	6.7	70
19	55	6.6	70
20	05	6.5	74
20	30	6.6	73
21	35	6.8	74
22	30	6.6	72
23	30	6.5	72
24	10	6.3	71
24	40	6.5	71
25	20	6.2	71
25	50	6.0	70
26	40	6.2	70
27	40	6.5	71
28	20	6.5	72
29	05	6.5	70
29	50	6.2	70
31	21	6.2	70
32	07	6.0	70
34	00	6.0	69
36	00	6.0	72
38	00	6.6	75
39	35	6.0	74
39	55	6.3	74

Table A9

Case 301: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	05	7.0	99
0	20	7.0	99
2	10	6.5	97
3	20	7.0	93
4	20	7.0	95
6	30	7.0	95
7	00	7.0	95
7	30	7.0	96
8	00	7.0	96
8	30	6.8	96
11	05	6.5	94
11	35	6.8	93
12	45	7.0	97
13	30	7.0	99
21	00	7.5	98
22	00	7.7	98.5
23	00	8.0	98
24	00	8.0	99.5
25	00	8.2	100.5
26	00	8.2	102.5
27	00	8.3	104
28	00	8.5	106
29	00	8.5	106
30	00	8.5	108.5
32	00	8.8	112
33	00	8.6	111.3
34	00	8.3	107.5
35	00	8.2	110
36	00	8.8	112
37	00	8.8	112

Table A10

Case 401: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	05	6.5-6.8	92
0	25	7.0	94
0	50	7.0	96
1	10	7.5	92
1	30	7.5	92
2	00	6.0	102
2	30	6.0	106
3	35	6.0	110
4	04	6.0	112
16	45	7.7	133.5
18	35	7.7	133.5
20	30	8.5	132.5
23	05	8.0	132
25	20	8.0	132
30	10	7.5	132.5
31	10	8.0	132.2
32	10	8.5	132.5
33	10	8.0	132.8
34	10	7.8	131.8
35	10	7.8	133.5
36	10	8.0	132
37	10	7.8	133
38	10	8.4	132.2
39	10	7.9	132.5
40	10	7.6	132.2
41	10	8.0	133
42	10	7.8	132.3
43	10	8.0	132.5
44	10	7.7	132.2
45	10	7.5	133
46	10	7.6	135.5
47	10	7.9	135.6
48	10	8.0	134.4
49	10	8.3	134
50	10	8.4	135.5
51	10	8.4	134.5
52	10	7.8	136
53	10	8.1	136.5

(Continued)

Table A10 (Concluded)

Time hr	Time min	Height ft	Location ft
54	05	7.6	136.6
55	05	8.4	135.5
57	05	7.8	135.5
59	05	7.8	137
60	05	7.5	135.5
61	15	8.2	137.6
62	05	8.4	135.6
63	15	8.4	136
64	45	8.0	136.5
65	45	7.5	137

Table A11

Case 501: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	20	6.0	138
1	10	6.0	138
1	49	6.2	138
3	05	5.5	118
5	00	6.1	126
7	05	6.0	132
7	40	6.2	136
8	40	6.2	136
9	10	6.2	138
9	45	6.2	136
10	10	6.0	136
11	25	6.2	138
12	05	5.3	125
14	05	5.2	126
17	35	5.5	134
18	05	5.5	134
19	05	5.5	136
19	50	5.3	134
20	05	5.3	136
21	50	5.3	134
23	25	5.5	136
24	05	4.5	128
25	37	4.2	128
26	02	4.5	132
26	44	4.3	137
27	02	5.6	136

(Continued)

Table A11 (Concluded)

Time		Height	Location
hr	min	ft	ft
29	00	5.2	144
30	05	5.2	144
31	05	5.4	146
33	40	5.5	148
35	05	5.3	143.5
36	00	5.2	148
37	08	5.3	144
38	12	5.4	149
41	05	5.2	154
43	25	5.0	158
45	45	5.0	158
46	40	5.2	158
47	45	5.2	158
49	20	5.2	158
51	05	5.2	151
51	55	5.4	150
53	05	5.5	151
54	10	5.4	150
56	00	5.3	151
56	55	5.4	150
59	15	5.2	154

Table A12

Case 501: Data for Secondary Wave Breaking

Time		Height	Location
hr	min	ft	ft
37	08	1.8	24
38	12	2.2	25
41	05	2.5	23
42	35*	2.4	24
43	25	2.4	24
44	15	2.5	24
45	45	2.5	24
46	40	2.5-3.0	24
47	45	2.8	24
49	20	3.0	24
51	05	2.5	19

(Continued)

* "This breaker diminishing in form; not as distinct as previously."

Table A12 (Concluded)

Time hr	Time min	Height ft	Location ft
51	55	2.6	20
53	05	2.5	19
54	10	2.5	17
56	00	2.6	18
56	55	2.6	19
59	15	2.5	20

Table A13

Case 701: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	40	10	106
1	35	9.6	102
2	30	4.0	98
4	45	4.5	88
5	15	4.5	88
6	45	5.0	88
7	10	5.5	88
8	30	6.0	97
8	50	6.0	97
9	30	6.0	98
9	50	6.0	98
7	55*	7.3	98
8	55*	7.5	100
9	50*	7.7	94
10	50	6.8	104
11	50	6.5	98
12	35	6.6	93
13	00	6.0	100
13	35	5.5	104
17	10	6.0	100
17	40	6.0	100
18	05	5.5	98
18	35	5.5	101
19	00	5.5	101
20	00	5.5	101
21	00	5.5	100
22	00	6.0	102
23	00	6.0	104

(Continued)

* In order of appearance in the logbook.

Table A13 (Concluded)

Time hr	Time min	Height ft	Location ft
24	10	8.0	98
25	00	7.5	99
27	35	6.0	105
28	30	6.0	110
30	00	6.0	101
32	30	8.0	104
35	25	7.0	109
36	30	7.0	109
37	30	7.0	108
38	00	7.0	107
39	00	7.0	108
39	30	7.0	108

Table A14

Case 801: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	10	3.0	48
0	40	3.0	48
1	10	3.2	46
1	55	3.4	45
2	40	3.2	45
5	00	1.9	39
5	35	1.8	38
8	00	3.0	44
8	30	2.5	44
9	00	2.5	44
9	30	2.5	46
10	00	2.5	45
10	30	2.5	45
11	00	3.0	43
11	30	3.0	43
12	00	3.0	43
12	30	3.0	43
13	00	3.0	43
15	00	2.3	38
16	23	2.3	40
17	05	2.2	39
19	05	2.0	38
20	00	2.0	38
21	00	2.0	40
22	00	2.3	40

(Continued)

Table A14 (Concluded)

Time hr	Time min	Height ft	Location ft
23	00	2.5	40
24	00	2.5	40
25	00	2.5	40
26	00	2.5	38
27	00	2.5	38
28	00	2.5	38
29	09	2.2	38
29	57	2.5	40
32	20	2.1	39
33	40	2.0	39
37	30	2.5	43
38	00	2.5	43
39	00	2.5	43
40	00	2.5	43
41	00	2.5	43
42	00	2.5	42
43	00	2.5	42
45	00	2.1	38
46	00	2.0	37
48	00	2.0	38

Table A15

Case 901: Breaking Wave Data

Time hr	Time min	Height ft	Location ft
0	35	6.5	94
1	05	7.0	102
1	30	7.0	102
2	00*	7.0	102
2	00**	7.0	102
2	30	7.0	106
3	06*	7.0	106
3	06**	7.5	110
3	30	7.5	109
4	12*	7.5	109
4	12**	7.2	110
4	30	7.2	109

(Continued)

* "Stop" (wave generator).
** "Start" (wave generator).

Table A15 (Concluded)

Time hr	Time min	Height ft	Location ft
5	12*	7.2	109
5	12**	7.0	114
5	30	7.0	114
5	57*	7.0	114
5	57**	6.8	118
6	12	6.8	120
7	10	5.9	120
8	10	6.3	127
10	05	5.3	129
11	05	6.0	128
13	25	6.2	119
14	29	6.5	116
15	45	6.5	114
16	52	6.8	114
17	37	6.6	120
18	15	6.6	120
19	00	6.5	124
22	00	6.0	135
23	05	6.4	132
24	56	6.0	132
25	05	6.0	132
25	50	5.8	121
26	50	5.8	122
28	00	6.4	122
29	00	6.2	120
29	15	5.8	120
30	05	5.4	120
31	46	6.1	126
32	05	6.3	131
33	05	5.3	135
34	34	5.0	139
35	15	5.1	132
37	06	5.8	129
37	15	5.5	128
37	35	5.6	129
38	15	5.6	126
39	15	6.0	122
40	28	6.0	122
41	21	6.0	120
41	47	6.2	120
42	34	5.6	122
43	18	5.0	121

* "Stop" (wave generator).
** "Start" (wave generator).

Runup Data

3. Runup measurements were available for all cases except Cases 100, 200, 300, and 400. The data are given in Table A16 in the original units of feet. Runup was measured for the first several waves generated at the start of the case and is defined as the maximum horizontal distance traveled from the initial still-water shoreline.

Table A16

Runup of Initial Waves*

Wave No.	Case No.										
	500	600	700	101	201	301	401	501	701	801	901
1	32	27	67	70	14	63	58	18	89	21	64
2	20	34	56	61	14	33	46	14	46	21	24
3	30	36	52	47	22	45	20	13	65	15	28
4	14	36	70	45	36	37	27	14	75	17	28
5	16	32	40	44	22	57	26	14	59	18	25
6	10	37	42	46	28	32	21	14	75	20	44
7	18	33	52	45	22	48	26	16	66	20	36
8	14	37	53	44	24	42	30	20	67	20	24
9	14	36	--	43	24	48	47	13	68	19	28
10	14	37	--	45	26	--	30	11	69	21	32
11	12	36	--	--	26	--	16	13	72	20	40
12	--	37	--	--	--	--	24	11	69	16	40
13	--	--	--	--	-	--	28	14	70	26	26
14	--	--	--	--	--	--	26	18	--	15	--
15	--	--	--	--	--	--	27	15	--	14	--
16	--	--	--	--	--	--	34	13	--	15	--
17	--	--	--	--	--	--	47	13	--	20	--
18	--	--	--	--	--	--	18	22	--	20	--
19	--	--	--	--	--	--	--	26	--	17	--
20	--	--	--	--	--	--	--	22	--	21	--
21	--	--	--	--	--	--	--	9	--	21	--

* In feet.

Water Temperature and Fall Velocity

4. This section contains data on water temperature and sand fall velocity. Much of this information was compiled from an unpublished letter of Seelig[8]* Seelig cross-referenced a number of sources and computed midmonth

* Endnote section appears at the end of the main text.

averages for each of 4 years of temperature measurements made in the LWT from 1969 to 1973. The wave generator was run to mix the water prior to measurement. A clear seasonal cycle was apparent, and the four averages for each month showed relatively small differences. Therefore, a grand average for each month is expected to provide a reasonable estimate of water temperature in the LWT during the movable-bed tests. Fall velocities for the 0.22-mm and 0.40-mm sands were measured by Seelig using the CERC Rapid Sediment Analyzer and water at 20° C. Fall velocities were then estimated at the other temperatures. This material was reviewed in the course of preparing this report and compiled in Table A17 for direct reference to the various cases.

Table A17

Representative Average Monthly Water Temperatures and Sand Fall Velocities

Case No.	Approx. Date month-year	Temperature deg C	Fall Velocity cm/sec
100	3-56	6	3.1
110	7-56	26	3.8
200	5-56	18	3.6
300	11-56	12	3.3
400	12-56	7	3.1
500	3-57	6	3.1
510	5-57	18	3.6
600	6-56	22	3.7
610	6-56	22	3.7
700	6-56	22	3.7
101	7-62	26	5.9
201	7-62	26	5.9
301	6-62	22	5.7
401	5-62	18	5.5
501	7-62	26	5.9
701	7-62	26	5.9
801	7-62	26	5.9
901	8-62	26	5.9
911	8-62	26	5.9

5. Water temperature in the LWT was recorded in the logbooks for Case 300. Elapsed time of wave action and water temperature are given in Table A18. Table A18 shows measured temperatures of about 5° C, whereas the estimate for this case in Table A17 gives 12° C. This difference has a small effect on fall velocity for the 0.22-mm sand.

Table A18

Water Temperatures Recorded During Case 300

Time hr	Temperature deg C
30	3.9
32	5.0
34	5.0
36	5.0
38	5.0
40	5.0
40	4.4
42	5.0
44	5.0
46	5.0
48	5.0
50	4.4

Water Level Variation for Case 911

6. Table A19 lists elapsed times and water elevation change for the simulated tidal cycle run during Case 911.

Table A19

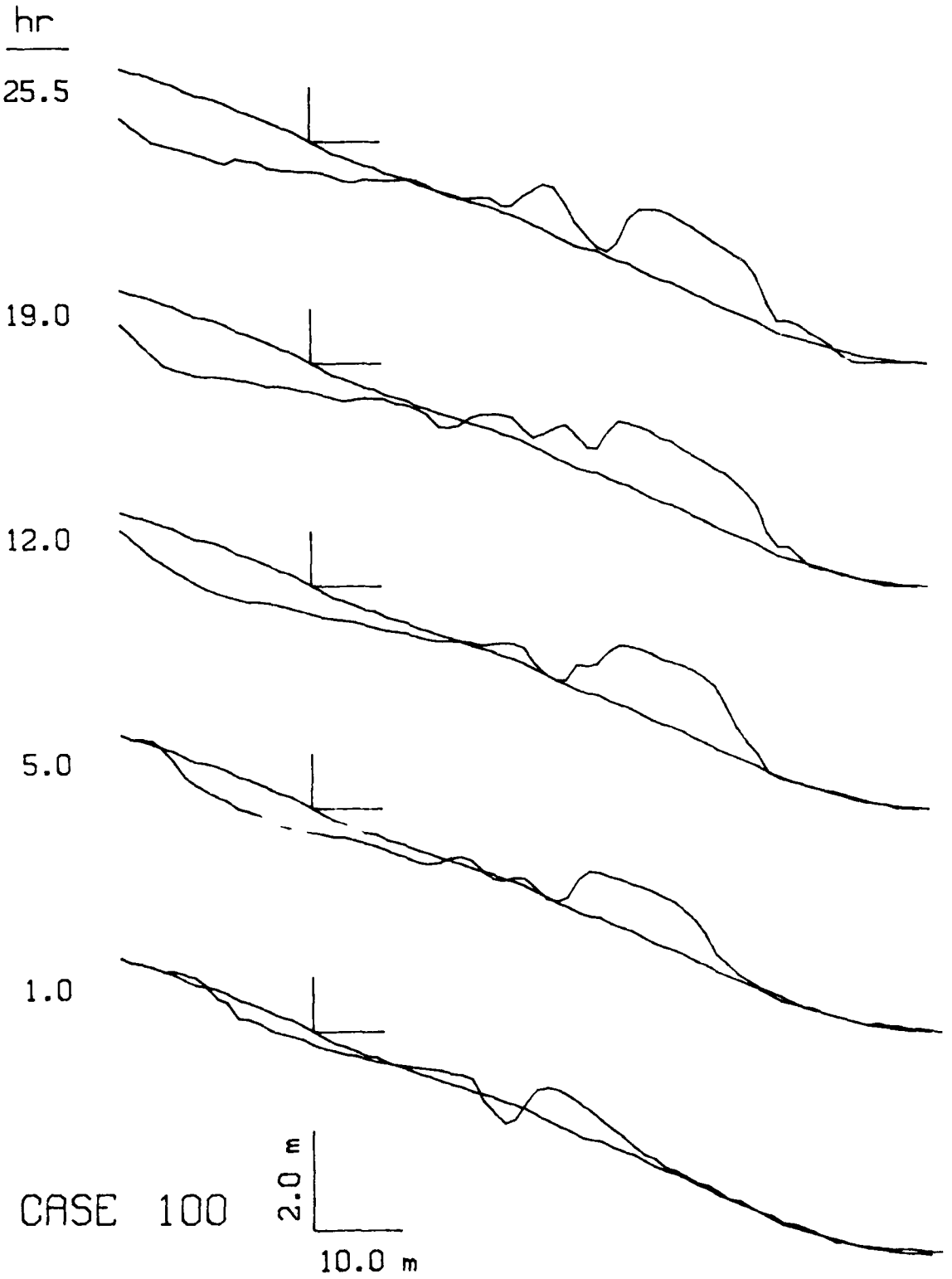
Elapsed Time and Water Elevation Change of Case 911

Time hr min	Elevation ft	Time hr min	Elevation ft
0 0	0.00	21 42	-1.20
0 35	0.34	22 48	-1.20
1 00	1.00	23 48	-1.00
1 30	1.00	24 33	-0.40
2 00	1.37	24 48	-0.40
2 30	1.37	25 03	0.00
3 06	1.37	25 48	0.40
3 30	1.37	26 26	1.00
4 12	1.37	26 48	1.00
4 30	1.00	27 21	1.45
5 12	1.00	27 54	1.45
6 12	0.00	29 00	1.45
6 27	0.00	29 30	1.00
7 12	-0.37	30 00	1.00
8 12	-1.00	30 45	0.40
9 18	-1.20	31 00	0.00
10 00	-1.20	32 00	-0.40
10 24	-1.20	33 00	-1.00
11 24	-1.00	34 06	-1.20
12 09	-0.45	35 12	-1.20
12 24	0.00	36 12	-1.00
13 24	0.45	36 57	-0.40
13 54	1.00	37 12	0.00
14 24	1.00	37 27	0.00
15 03	1.45	38 12	0.40
15 30	1.45	38 42	1.00
16 36	1.45	39 12	1.00
17 04	1.00	39 42	1.45
17 36	1.00	40 18	1.45
18 21	0.00	41 24	1.45
18 51	0.00	42 24	1.00
19 36	-0.40	43 10	1.00
20 36	-1.00	43 30	0.00

APPENDIX B: PLOTS OF BEACH PROFILES

1. This appendix contains plots of the profile survey data contained in Appendix C. The plots in Figure B1 are presented in order of case number and survey time as listed in Table 1 of the main text. Each profile is plotted together with the initial profile for the case. Case number is indicated in the bottom left corner of each sheet, and survey time is given on the left edge. The location of the initial still-water shoreline is indicated by two lines joining at right angles.

2. Distance-elevation survey pairs listed in Appendix C are given in units of feet, whereas the plots are in metric units. The scale is shown on the bottom left side of each sheet.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19.0
12.0
5.0
1.0
CASE 100
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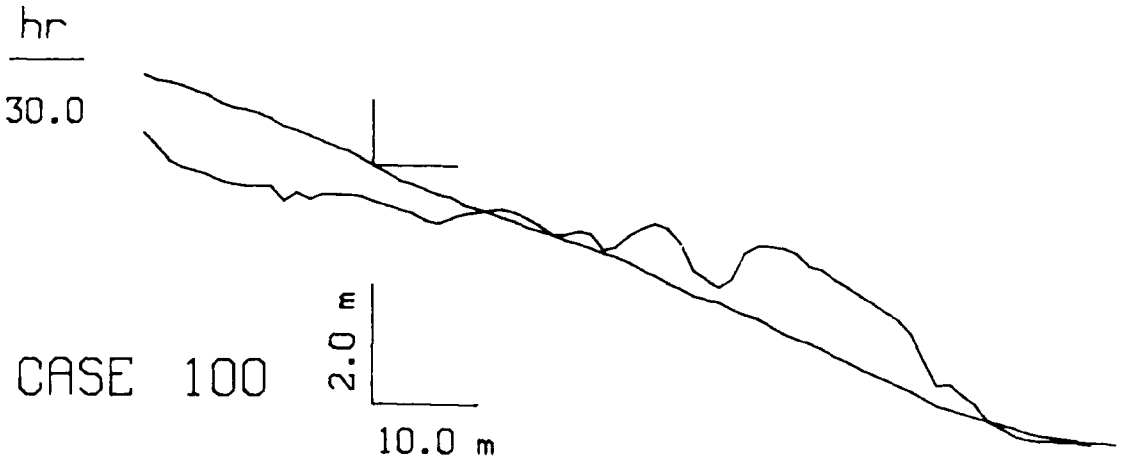
10.0 m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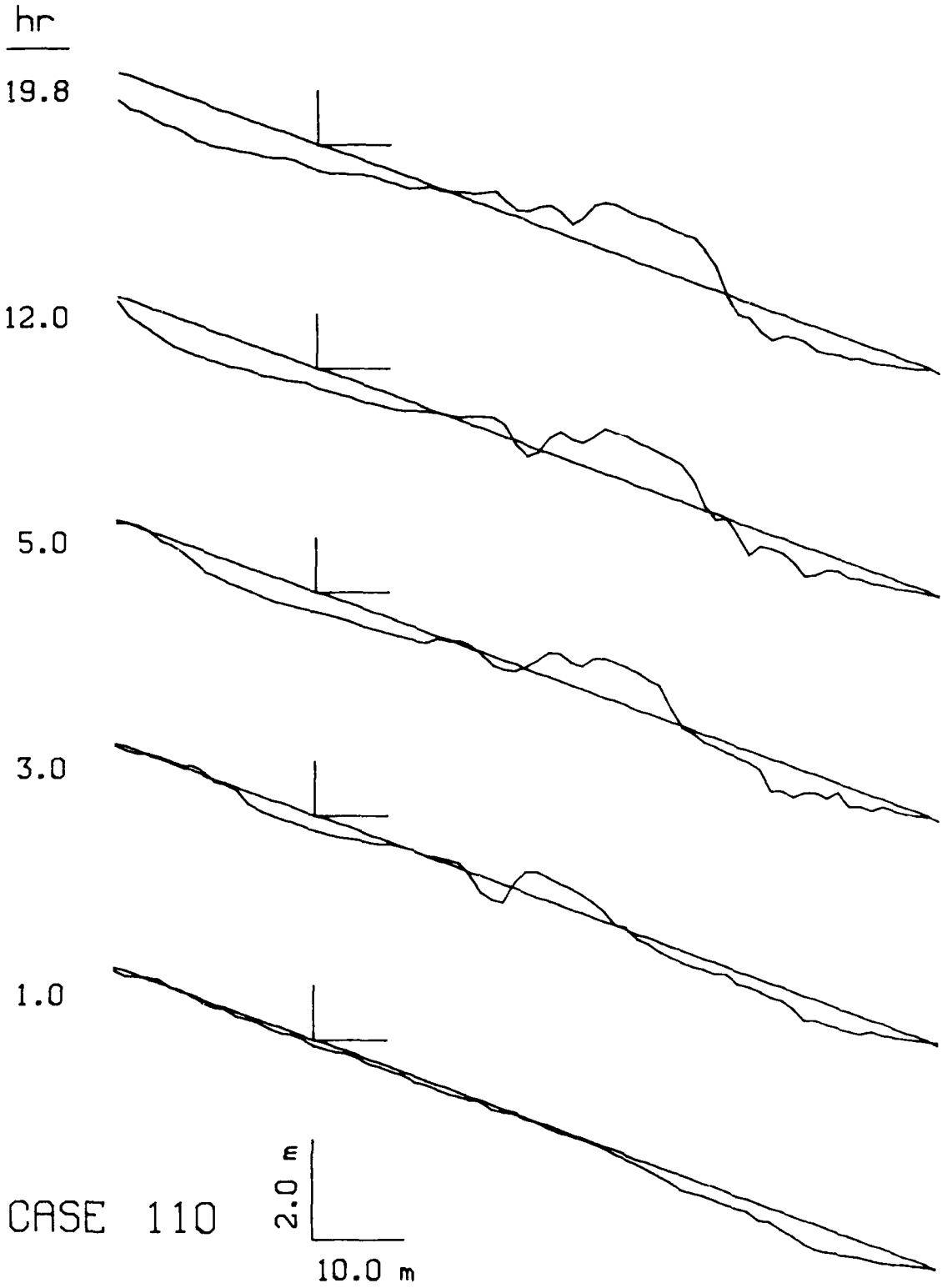
CASE 100
2.0 m
10.0 m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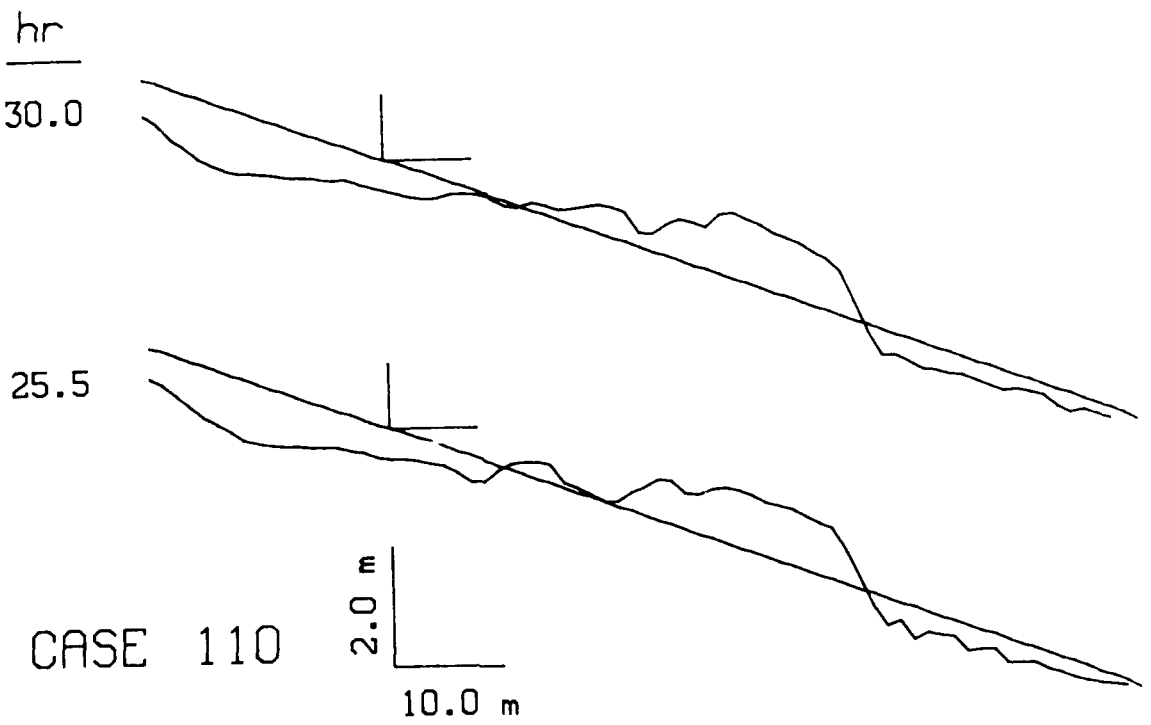
12.0
5.0
3.0
1.0
CASE 110
2.0 m
10.0 m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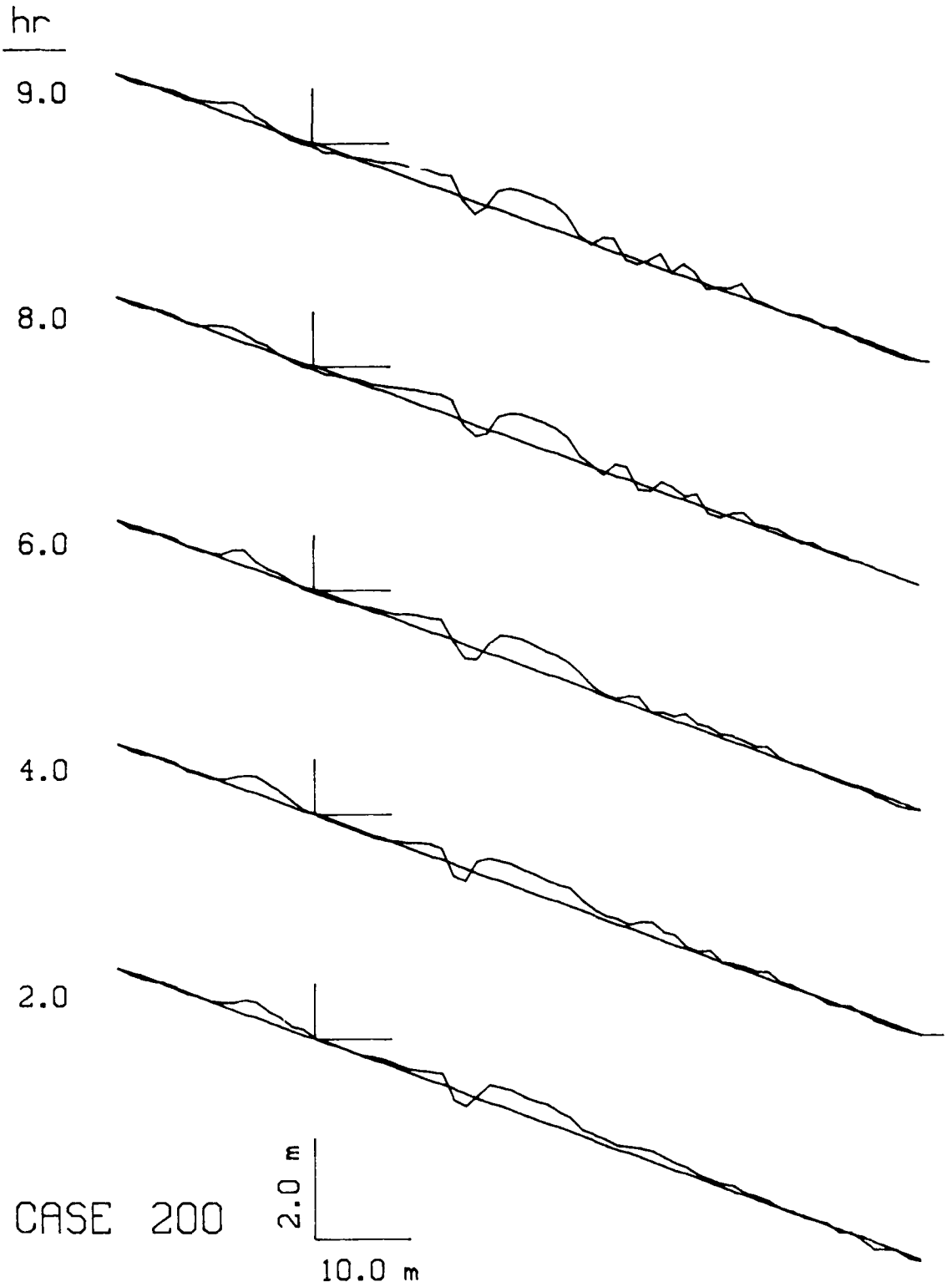
25.5
CASE 110
2.0 m
10.0 m


hr
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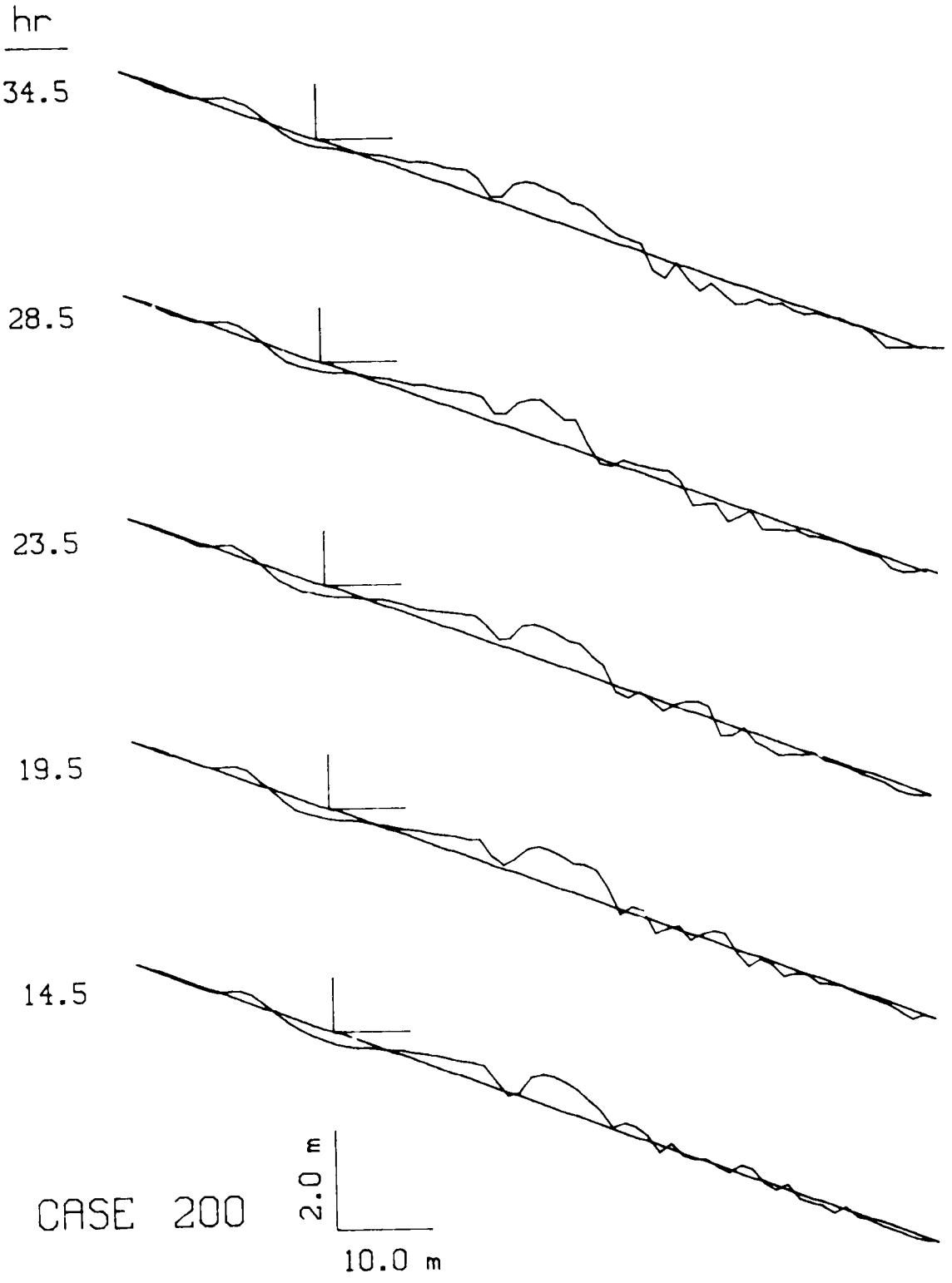
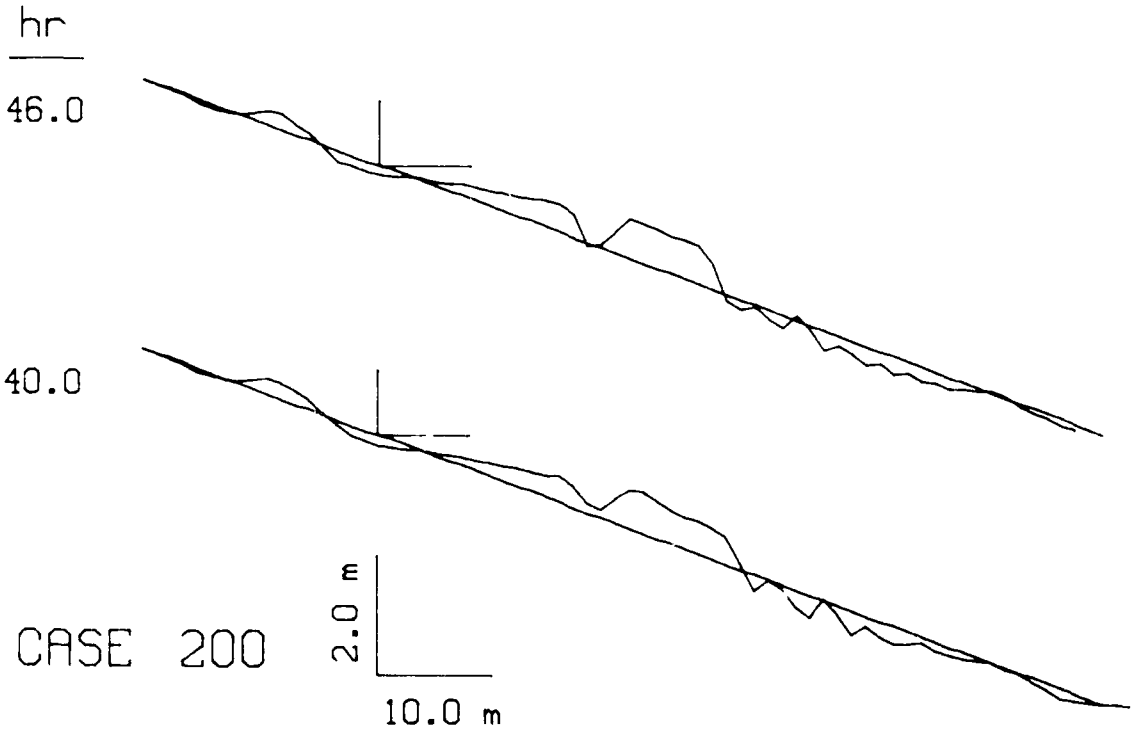
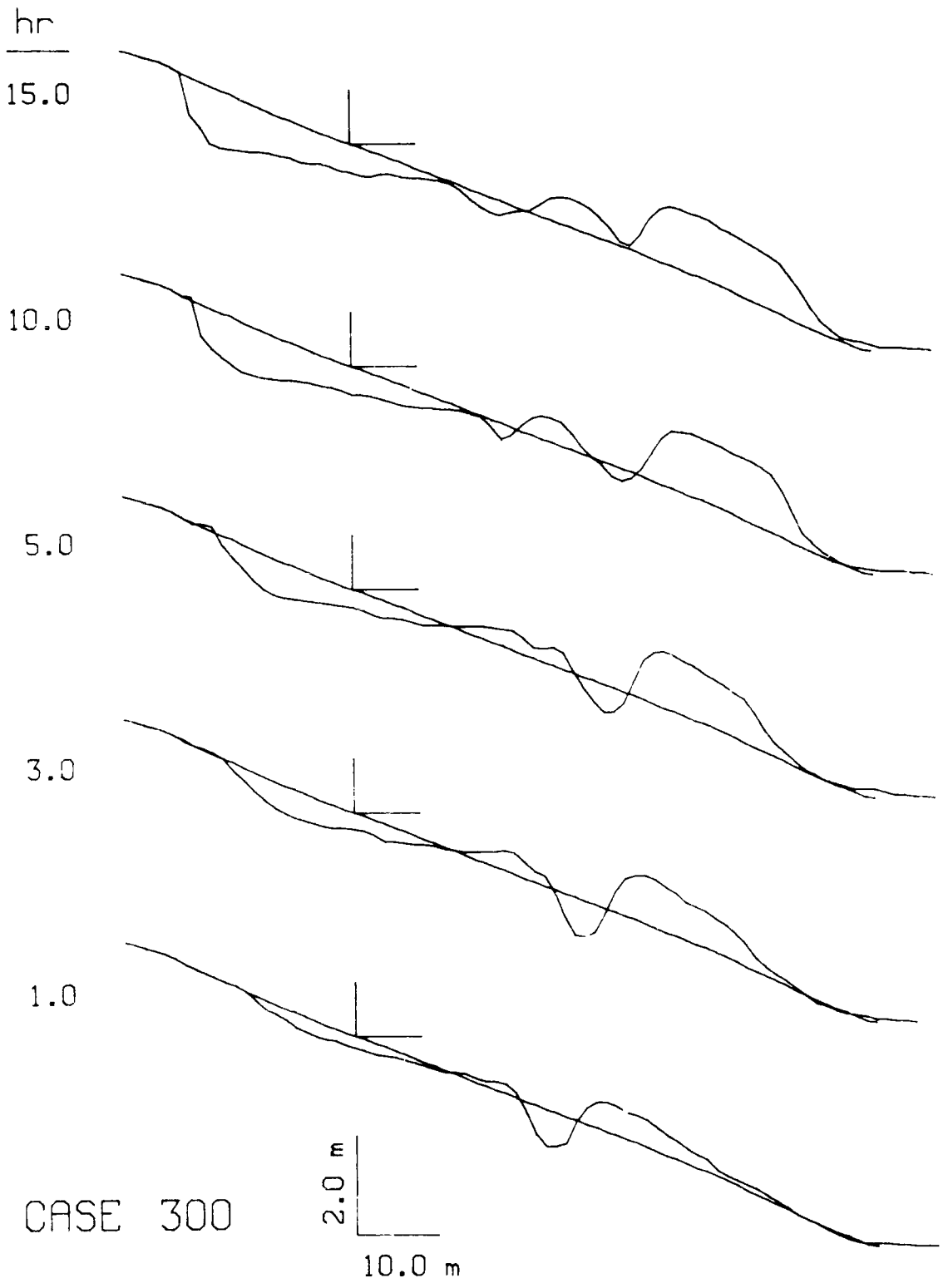
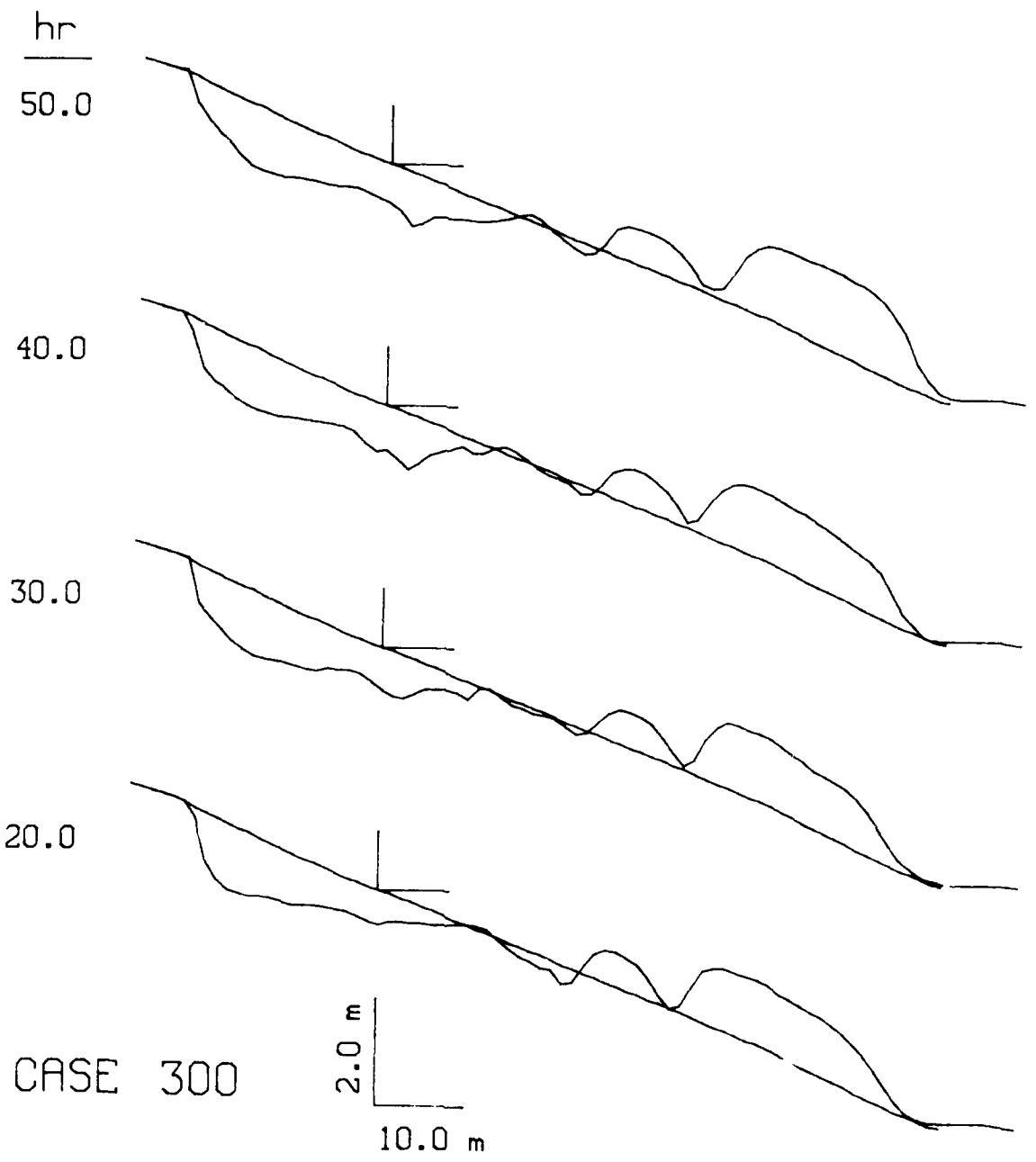
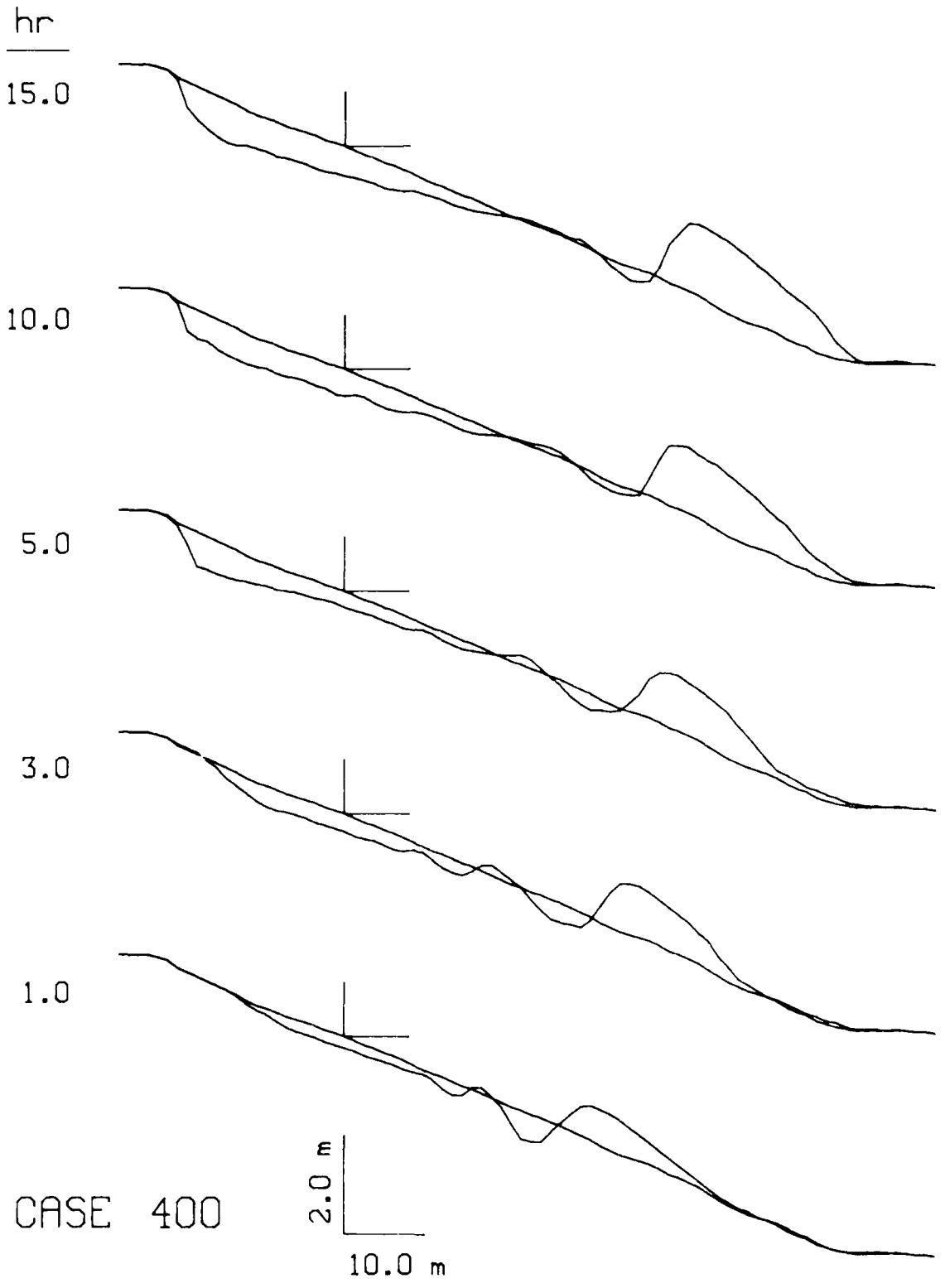
8.0
6.0
4.0
2.0
CASE 200
2.0 m
10.0 m

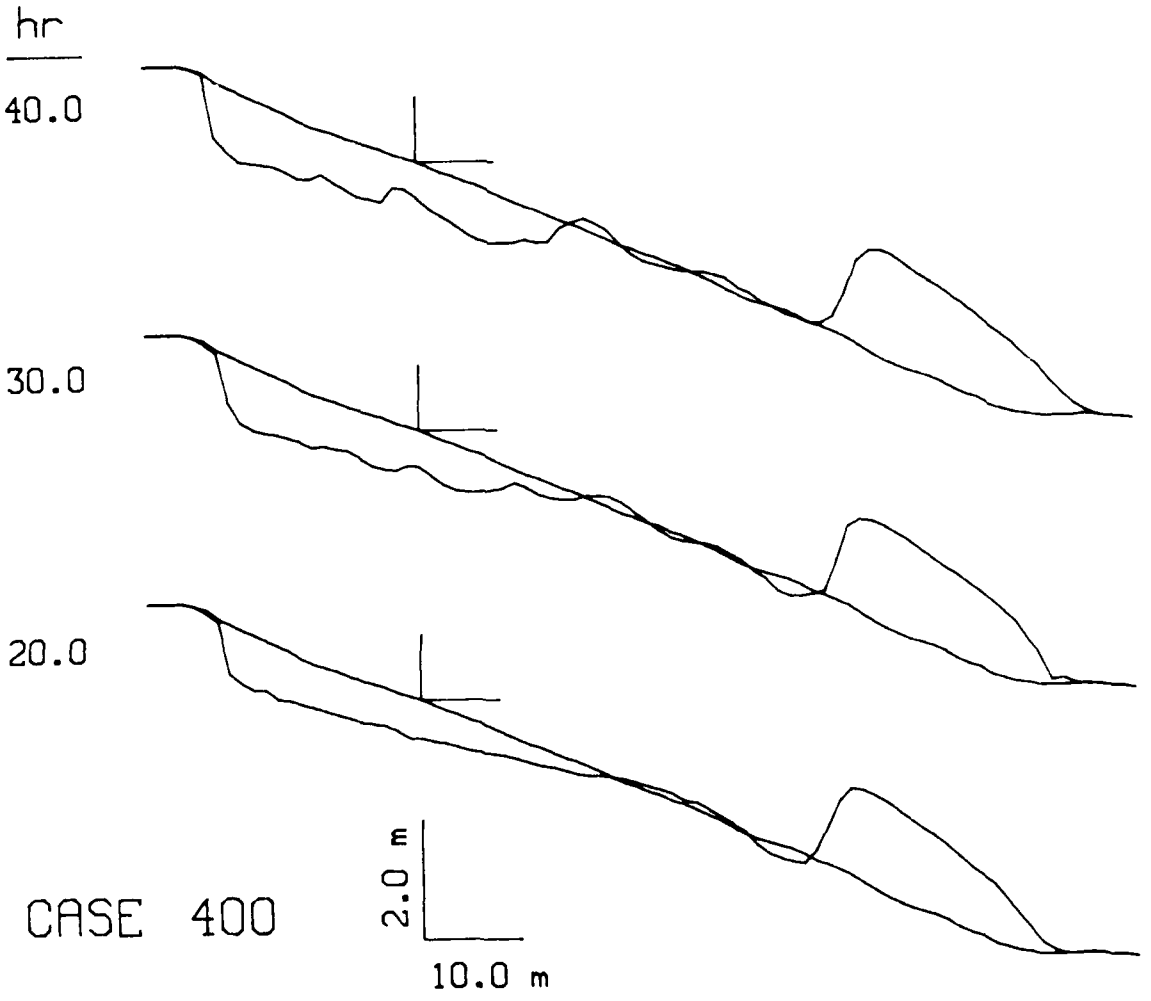

hr
34.5
28.5
23.5
19.5
14.5
CASE 200
2.0 m
10.0 m

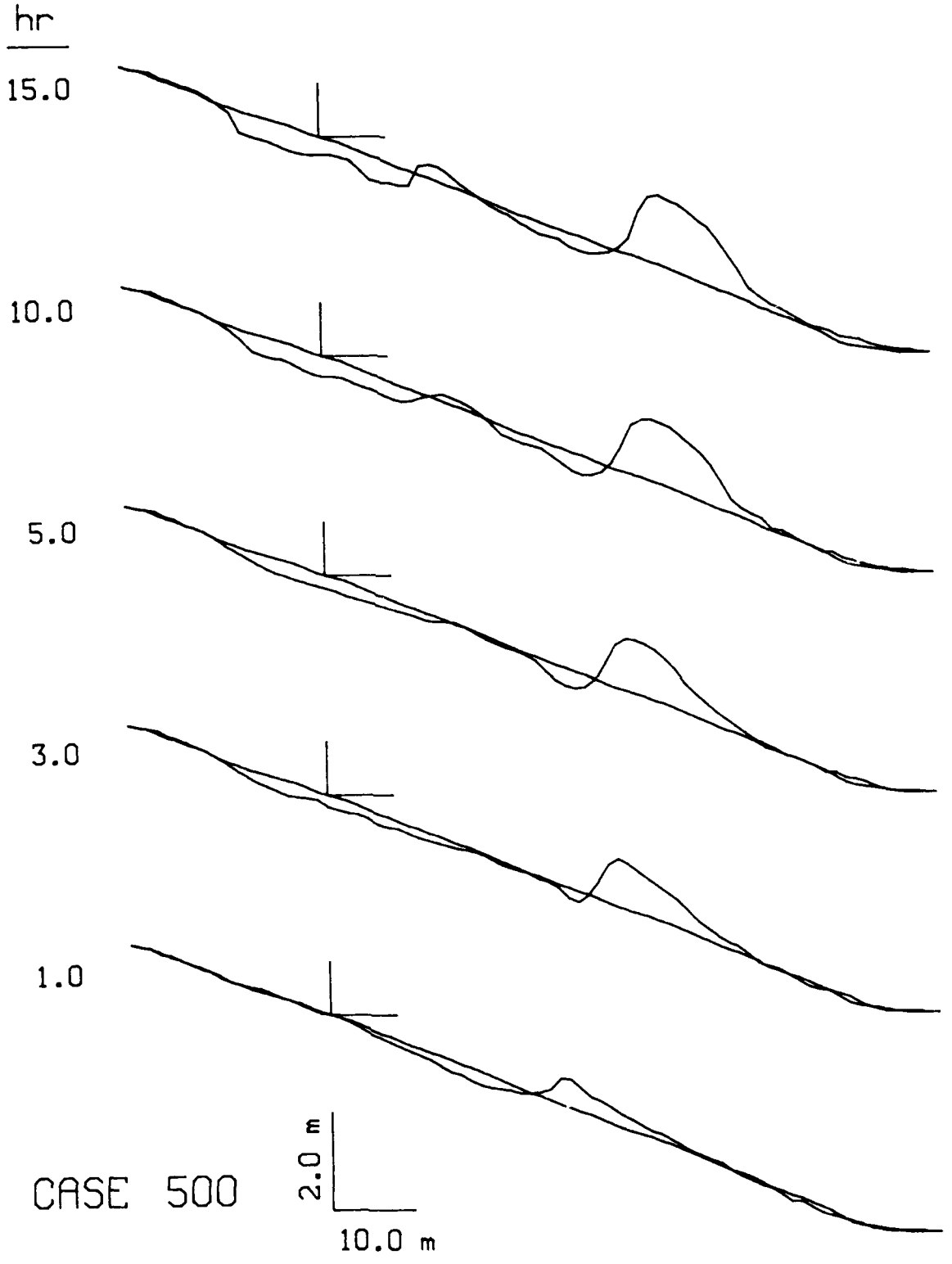

hr
46.0
40.0
CASE 200
2.0 m
10.0 m

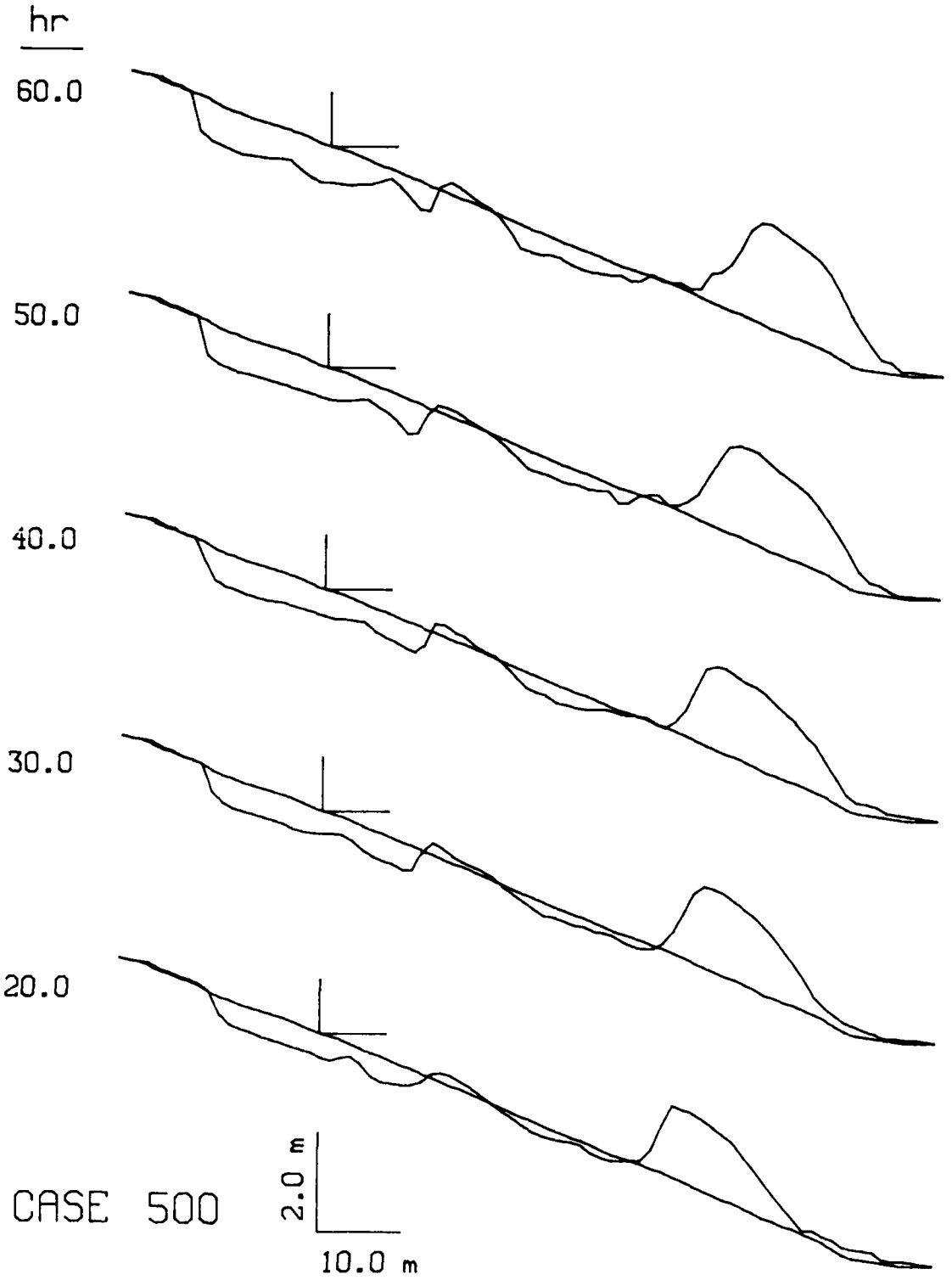

hr
15.0
10.0
5.0
3.0
1.0
CASE 300
2.0 m
10.0 m

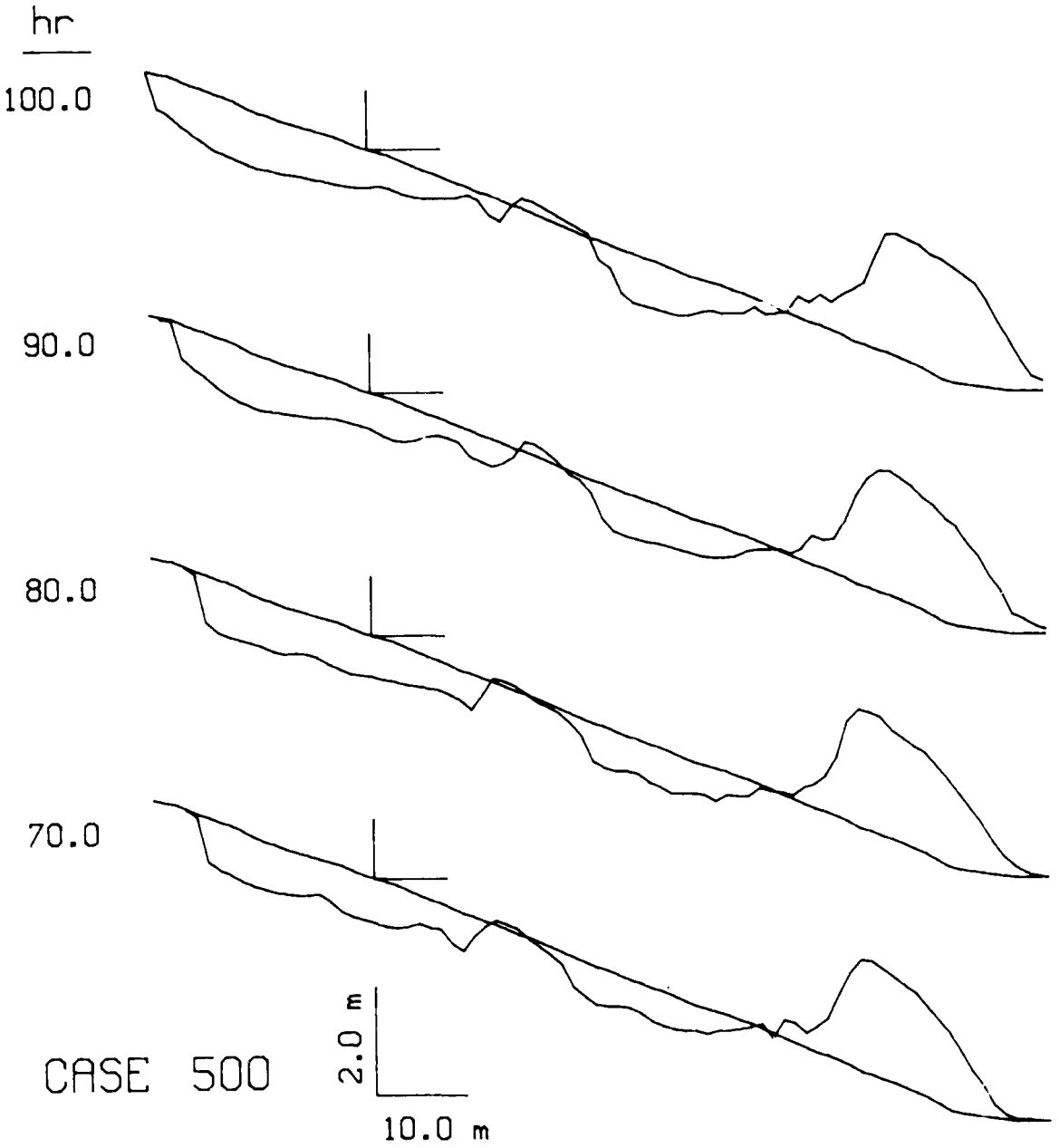

hr
50.0
40.0
30.0
20.0
CASE 300
ε
2.0
10.0 m

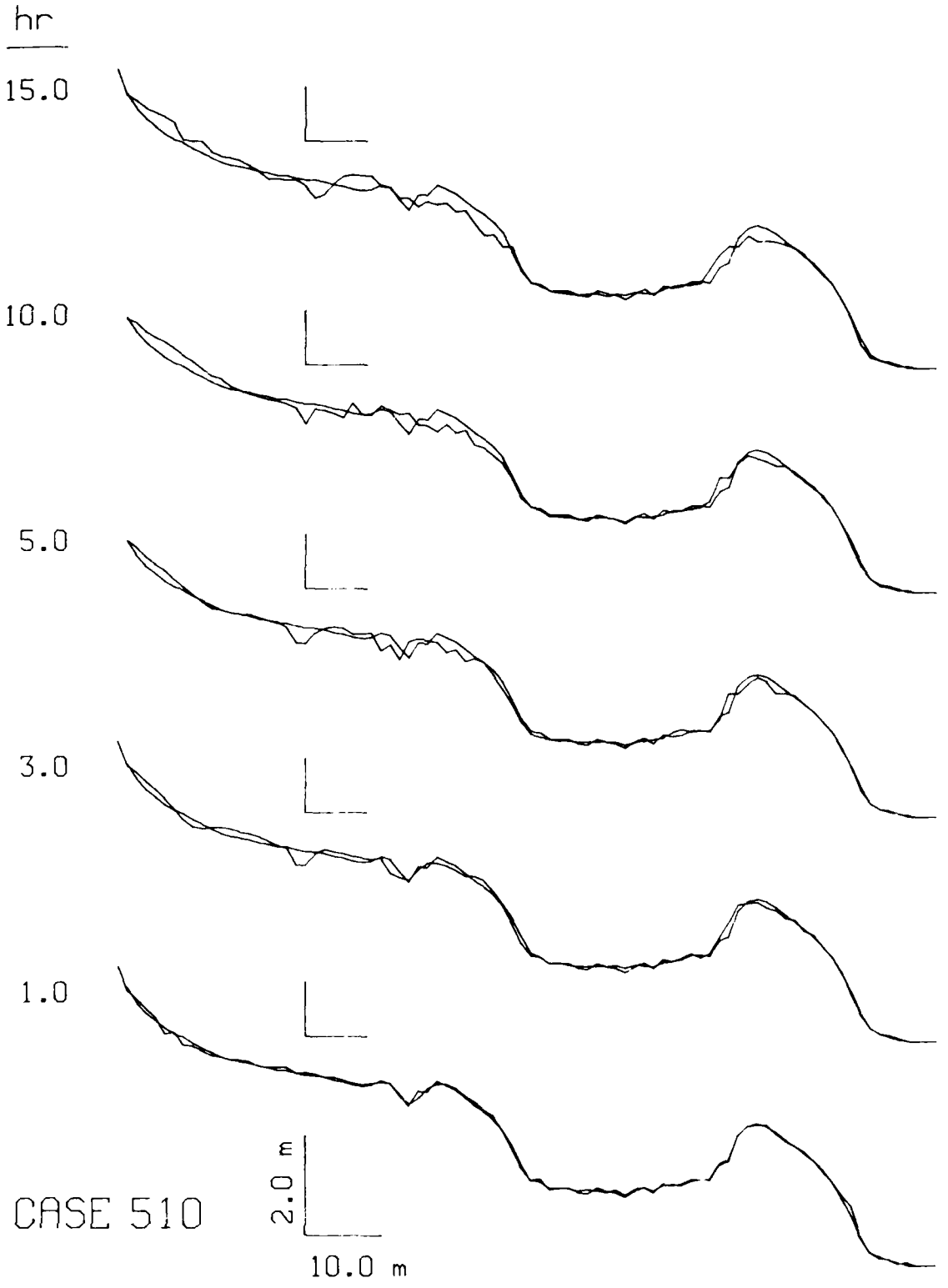

hr
15.0
10.0
5.0
3.0
1.0
CASE 400
2.0 m
10.0 m

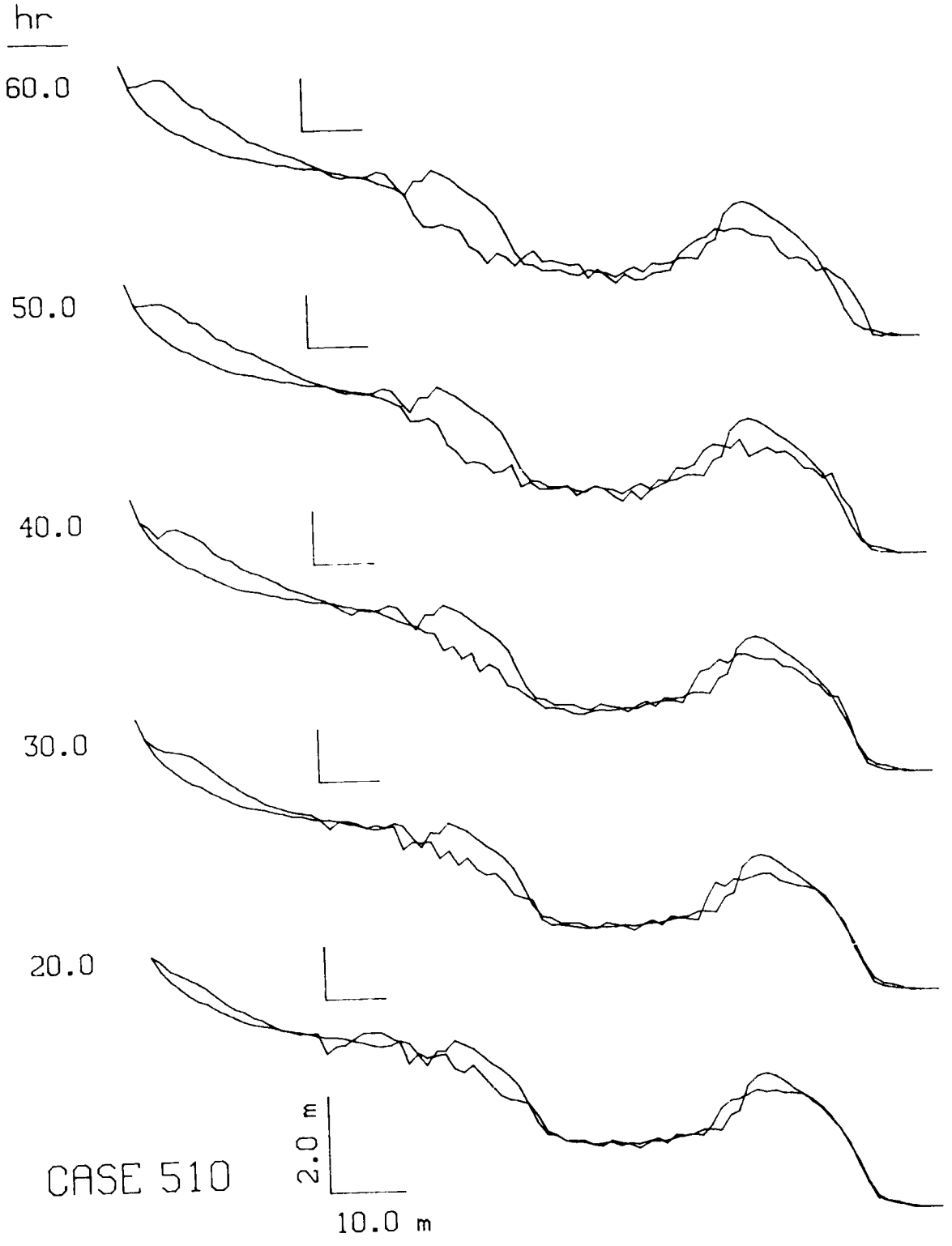

hr
40.0
30.0
20.0
CASE 400
2.0 m
10.0 m

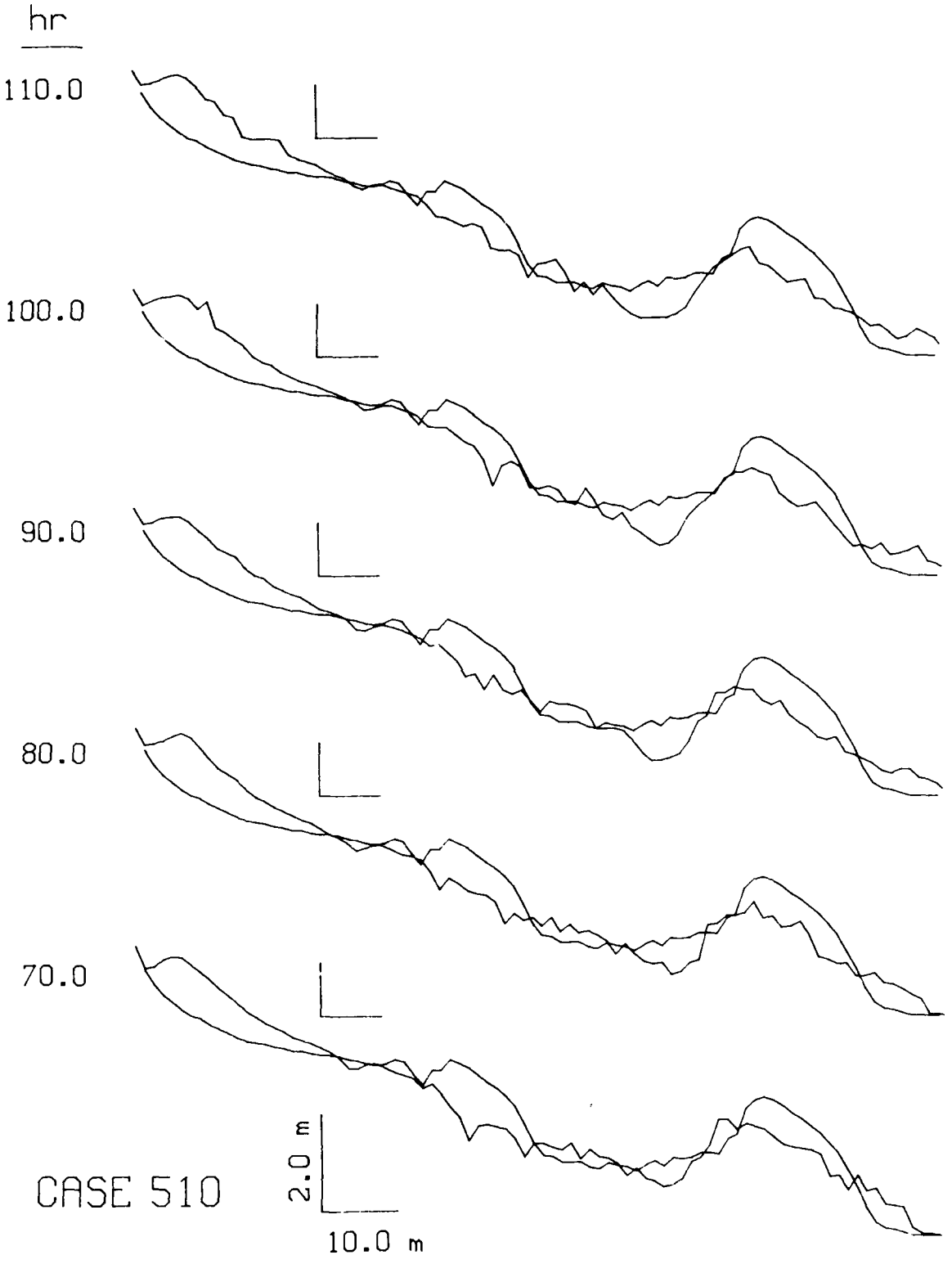

hr
15.0
10.0
5.0
3.0
1.0
CASE 500
2.0 m
10.0 m

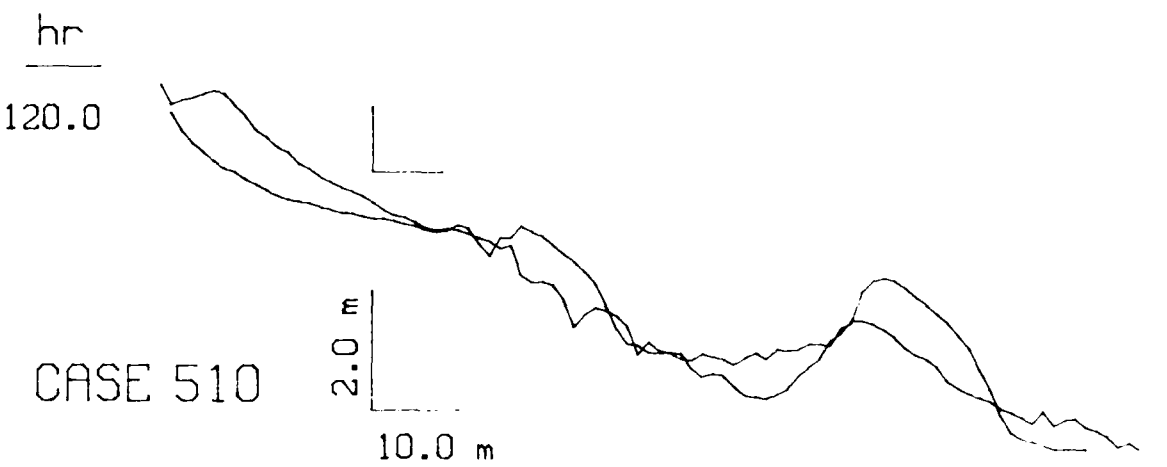

hr
60.0
50.0
40.0
30.0
20.0
CASE 500
2.0 m
10.0 m

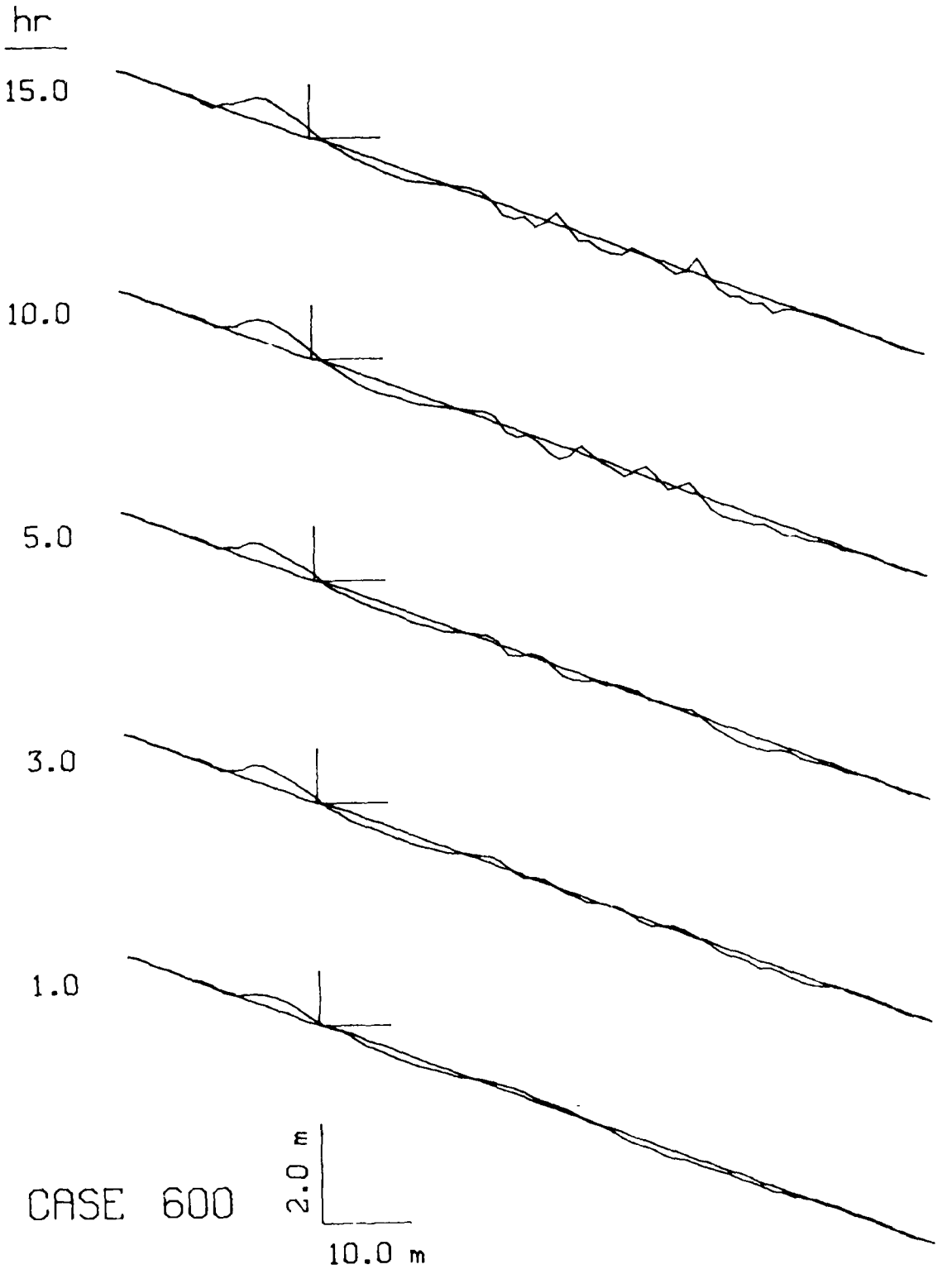

hr
100.0
90.0
80.0
70.0
CASE 500
2.0 m
10.0 m

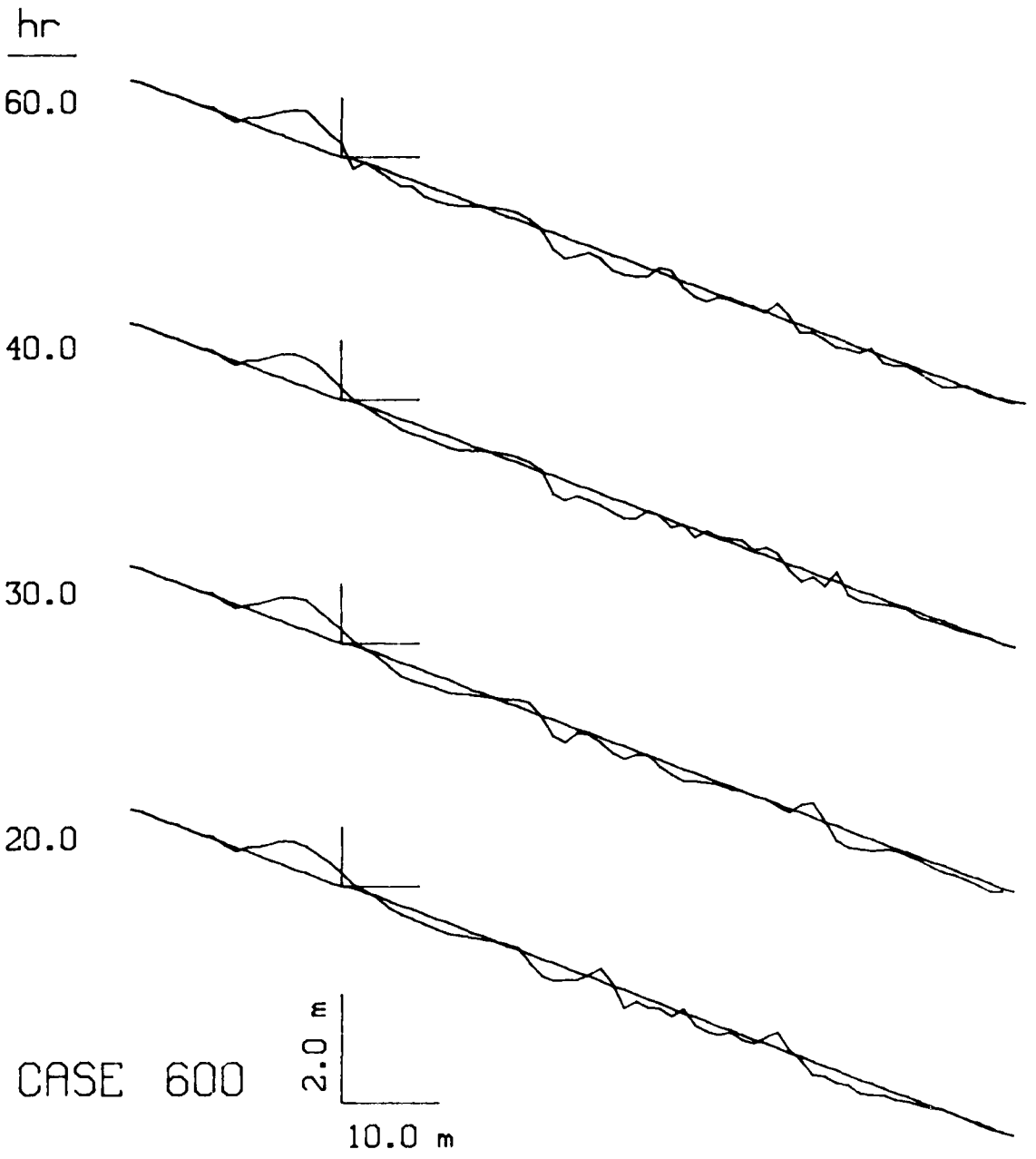

hr
15.0
10.0
5.0
3.0
1.0
CASE 510
2.0 m
10.0 m

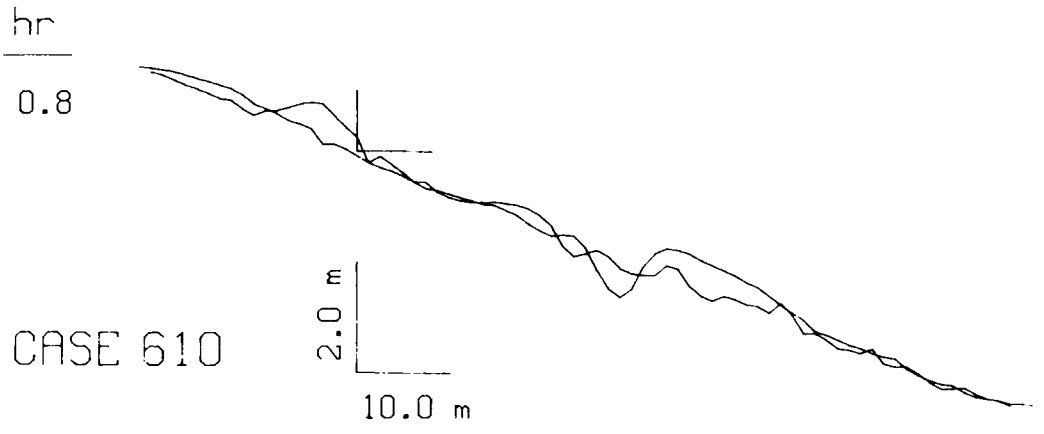

hr
60.0
50.0
40.0
30.0
20.0
CASE 510
2.0 m
10.0 m

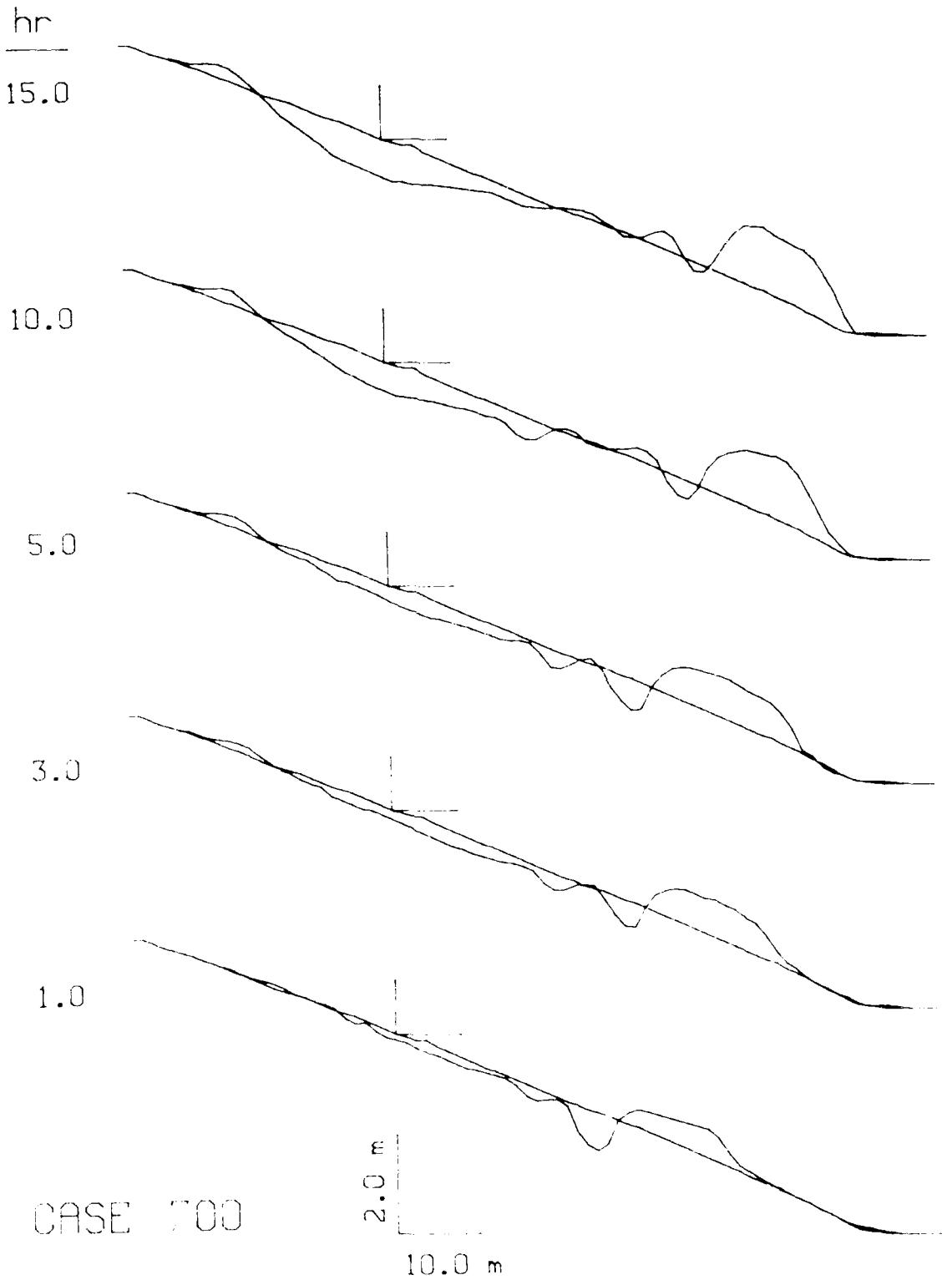

hr
110.0
100.0
90.0
80.0
70.0
CASE 510
2.0 m
10.0 m


hr
120.0
CASE 510
2.0 m
10.0 m

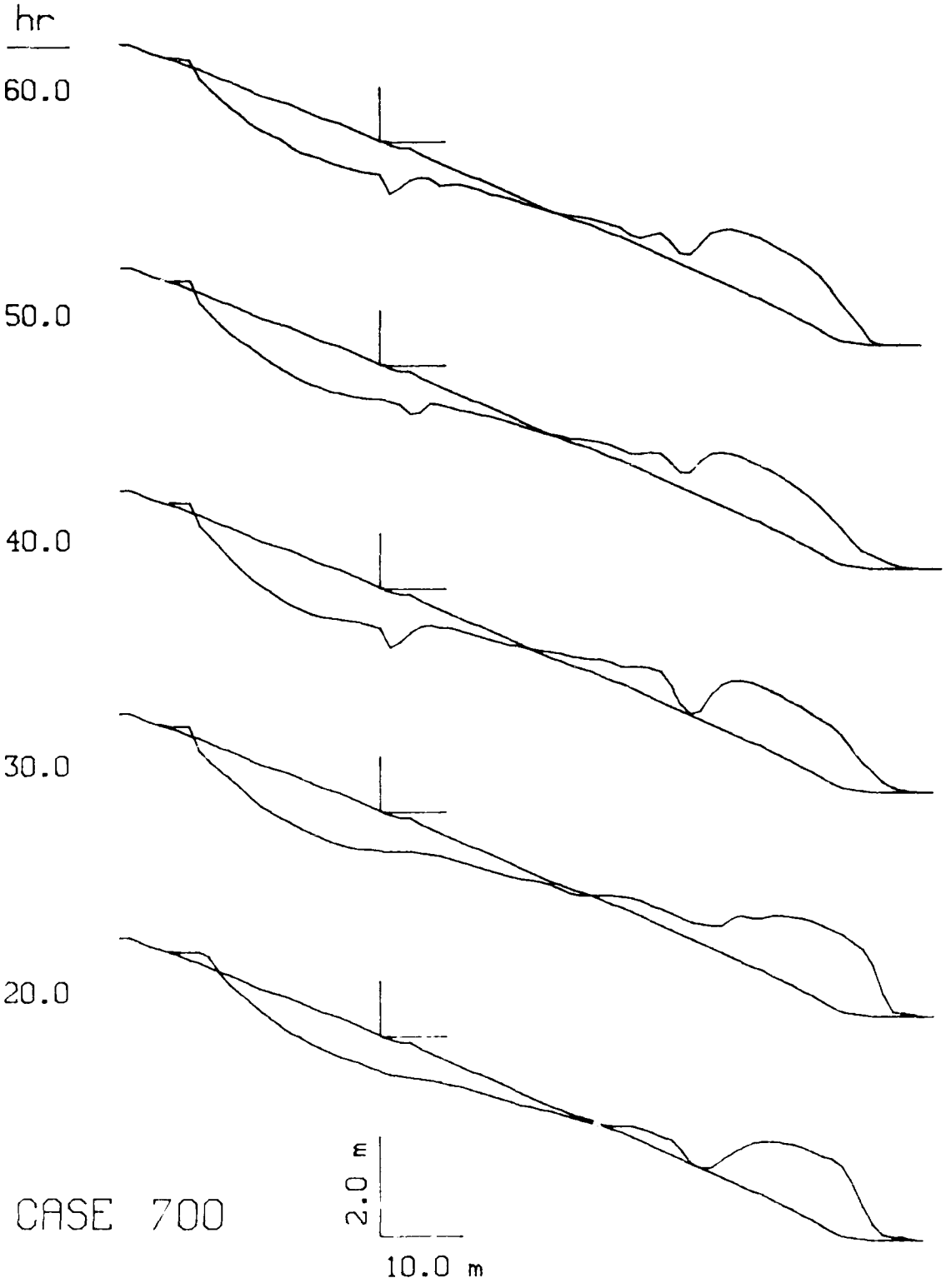

hr
15.0
10.0
5.0
3.0
1.0
CASE 600
2.0 m
10.0 m

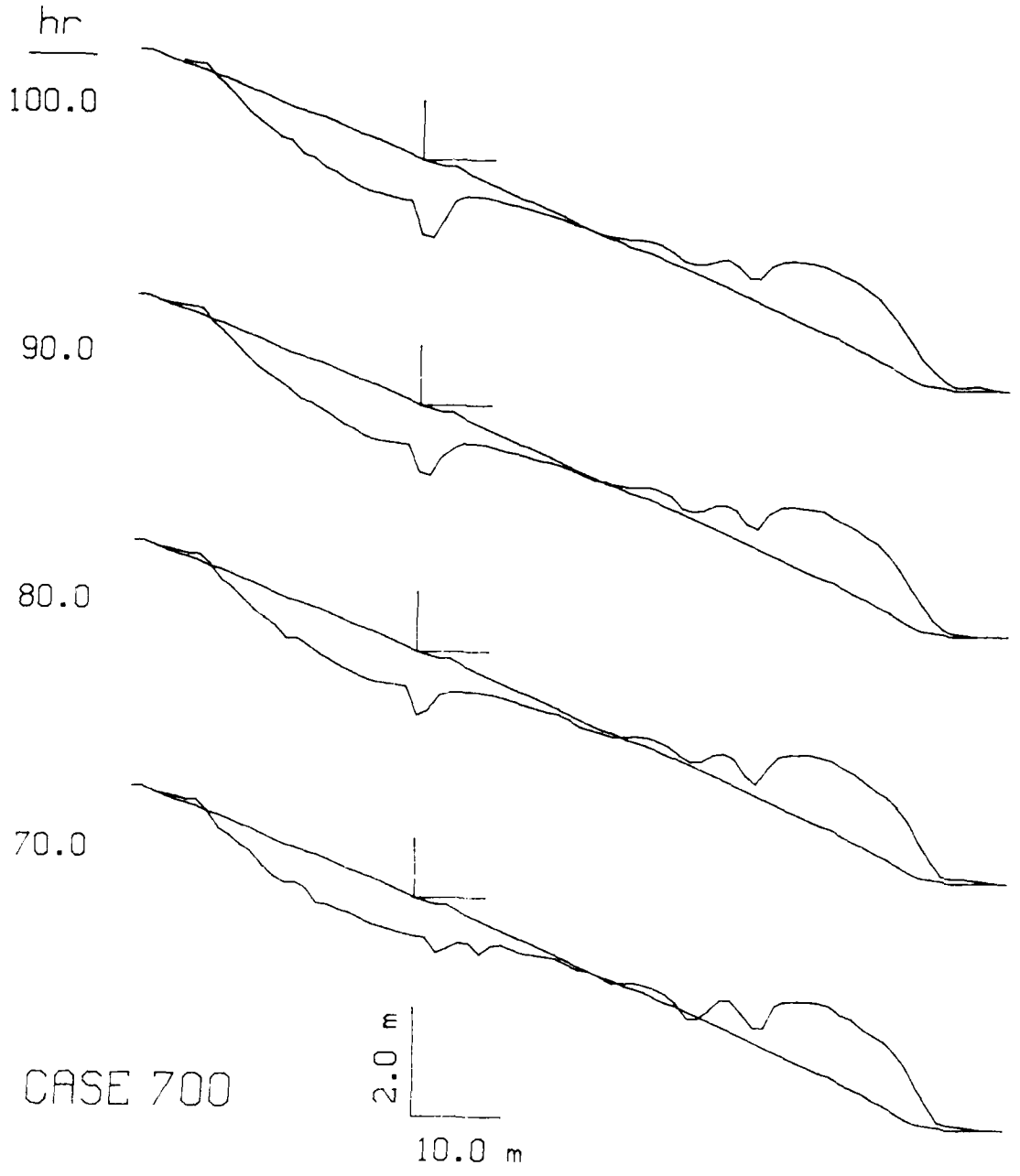

hr
60.0
40.0
30.0
20.0
CASE 600
2.0 m
10.0 m

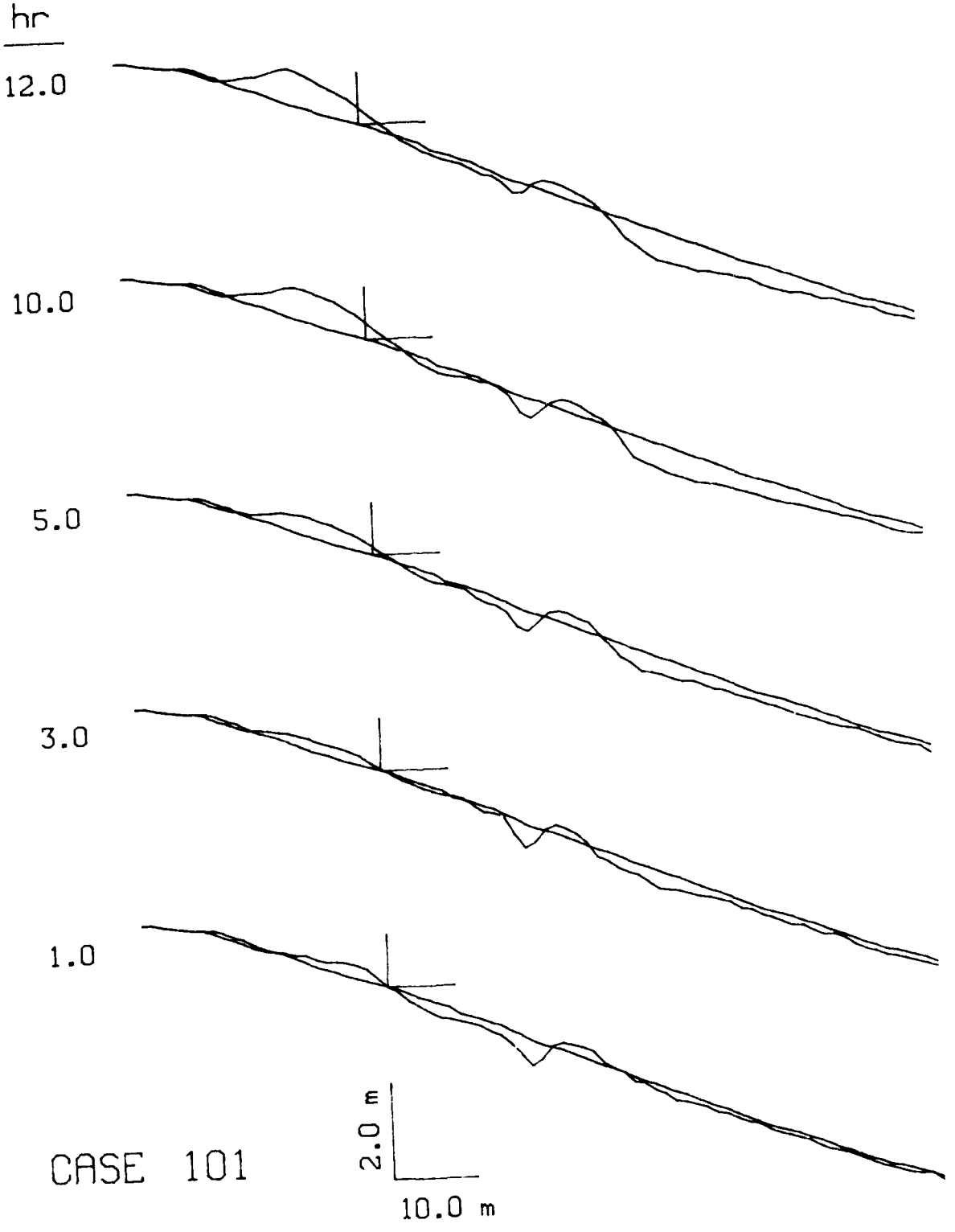

hr
0.8
CASE 610
2.0 m
10.0 m

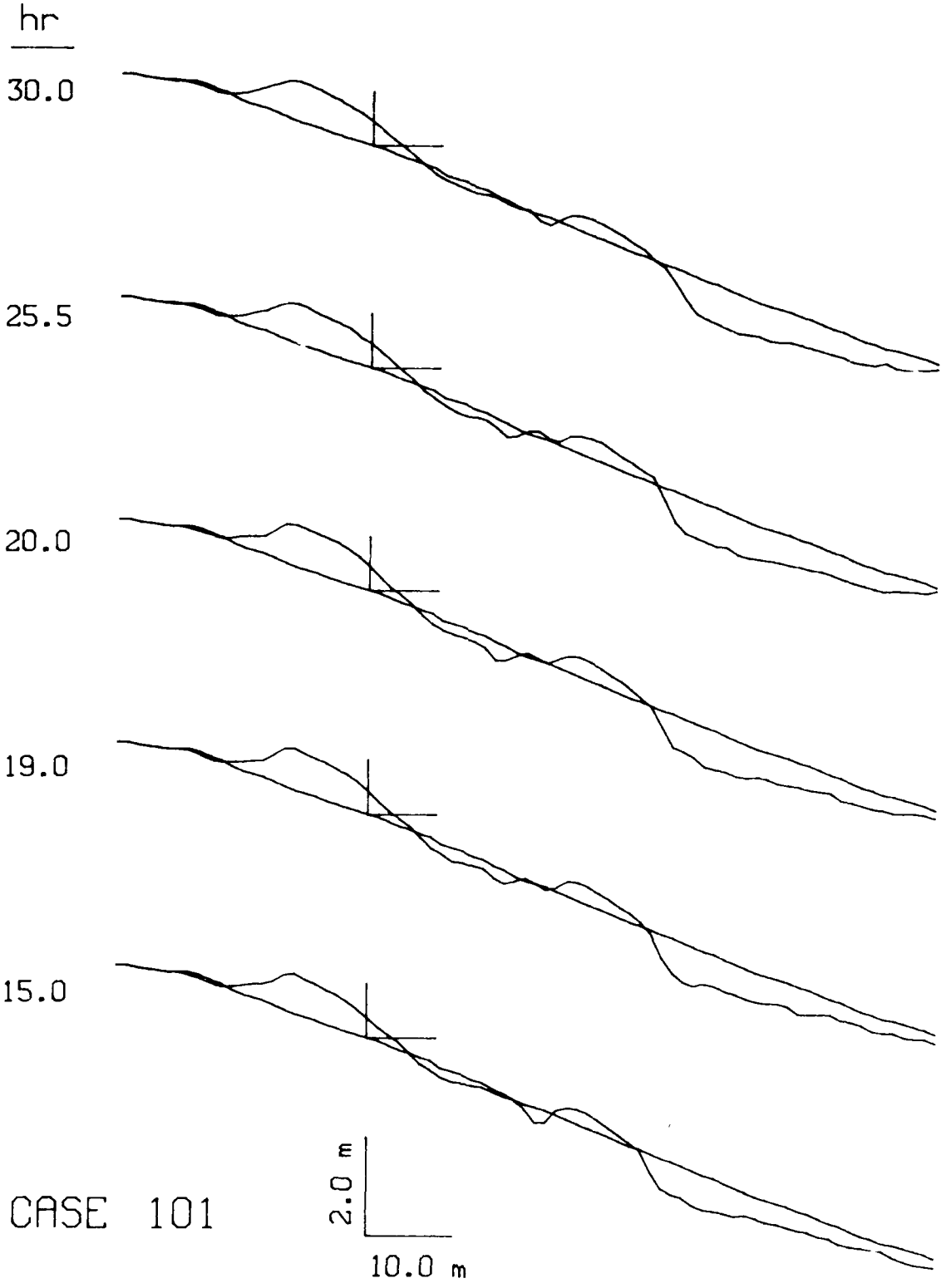


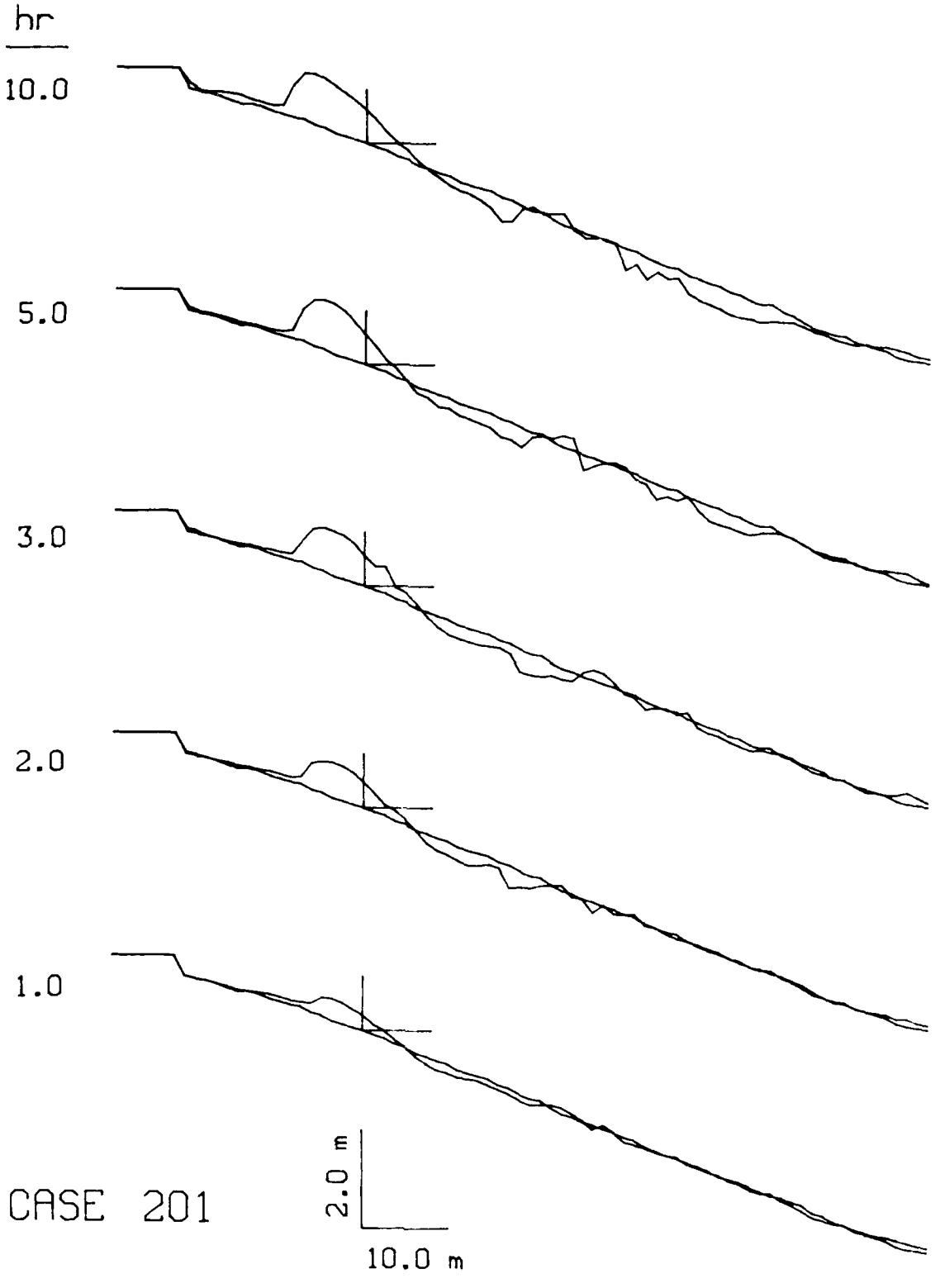
CASE 700

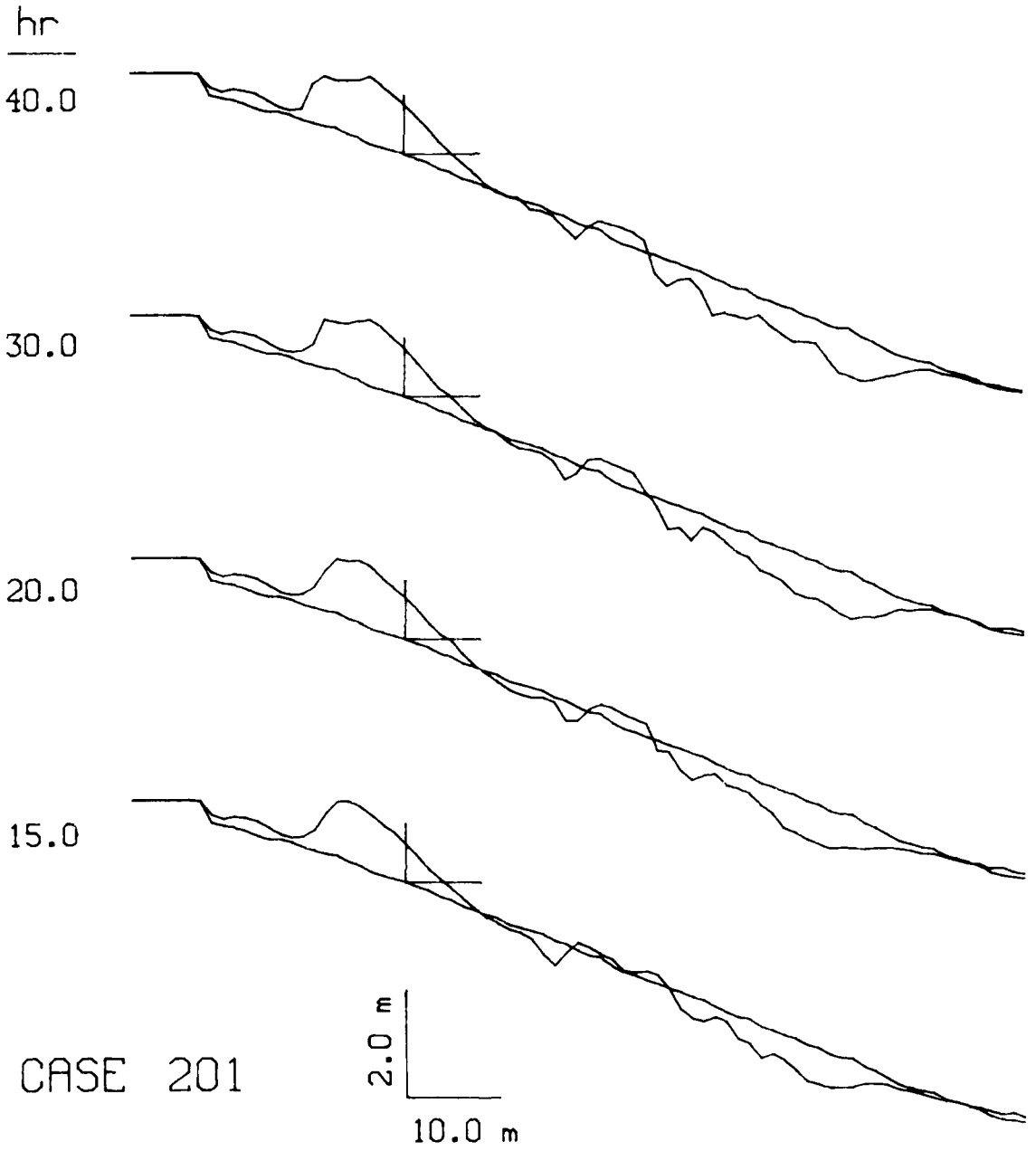

hr
60.0
50.0
40.0
30.0
20.0
CASE 700
2.0 m
10.0 m

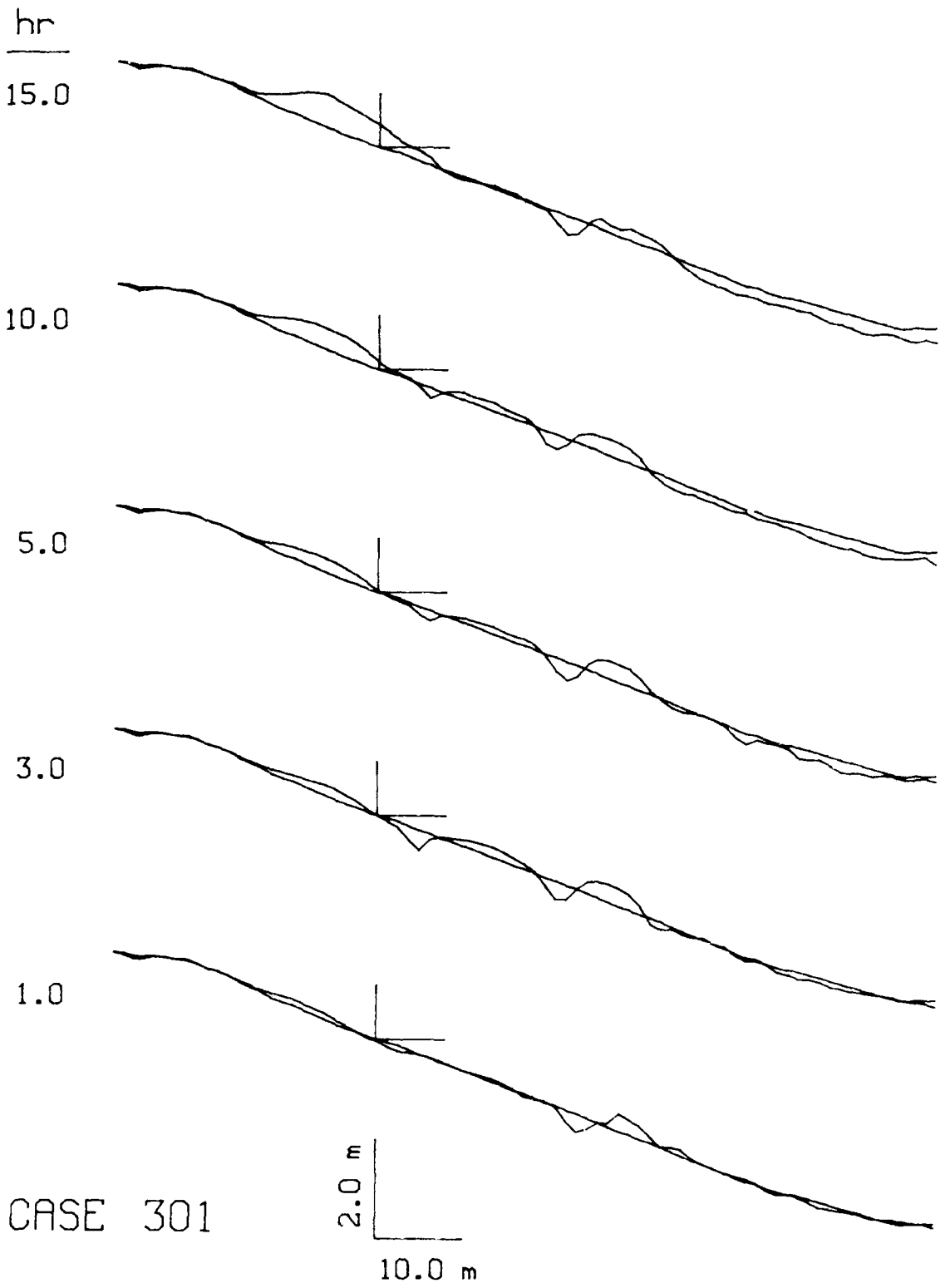

hr
100.0
90.0
80.0
70.0
CASE 700
2.0 m
10.0 m

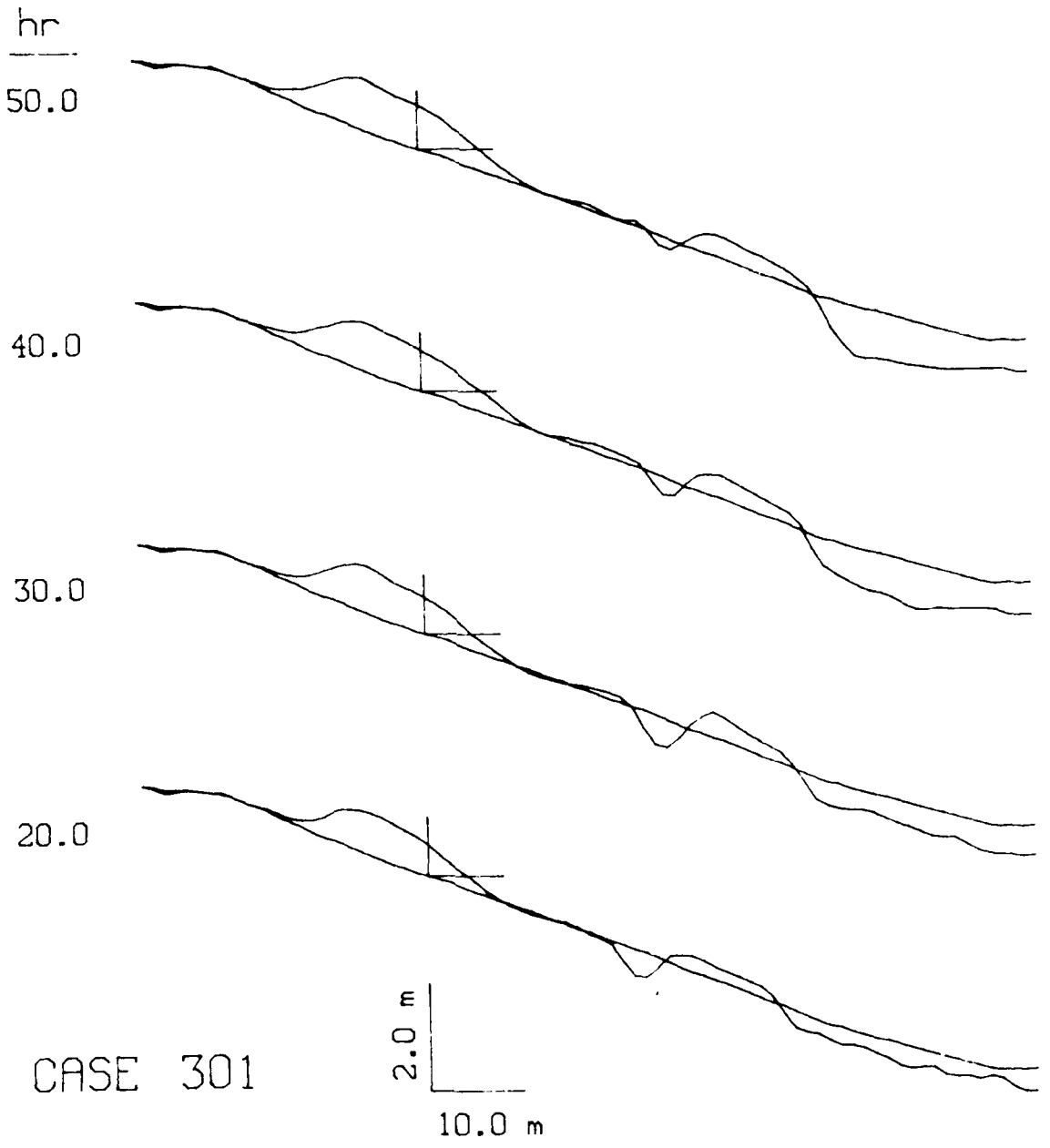

hr
12.0
10.0
5.0
3.0
1.0
CASE 101
2.0 m
10.0 m

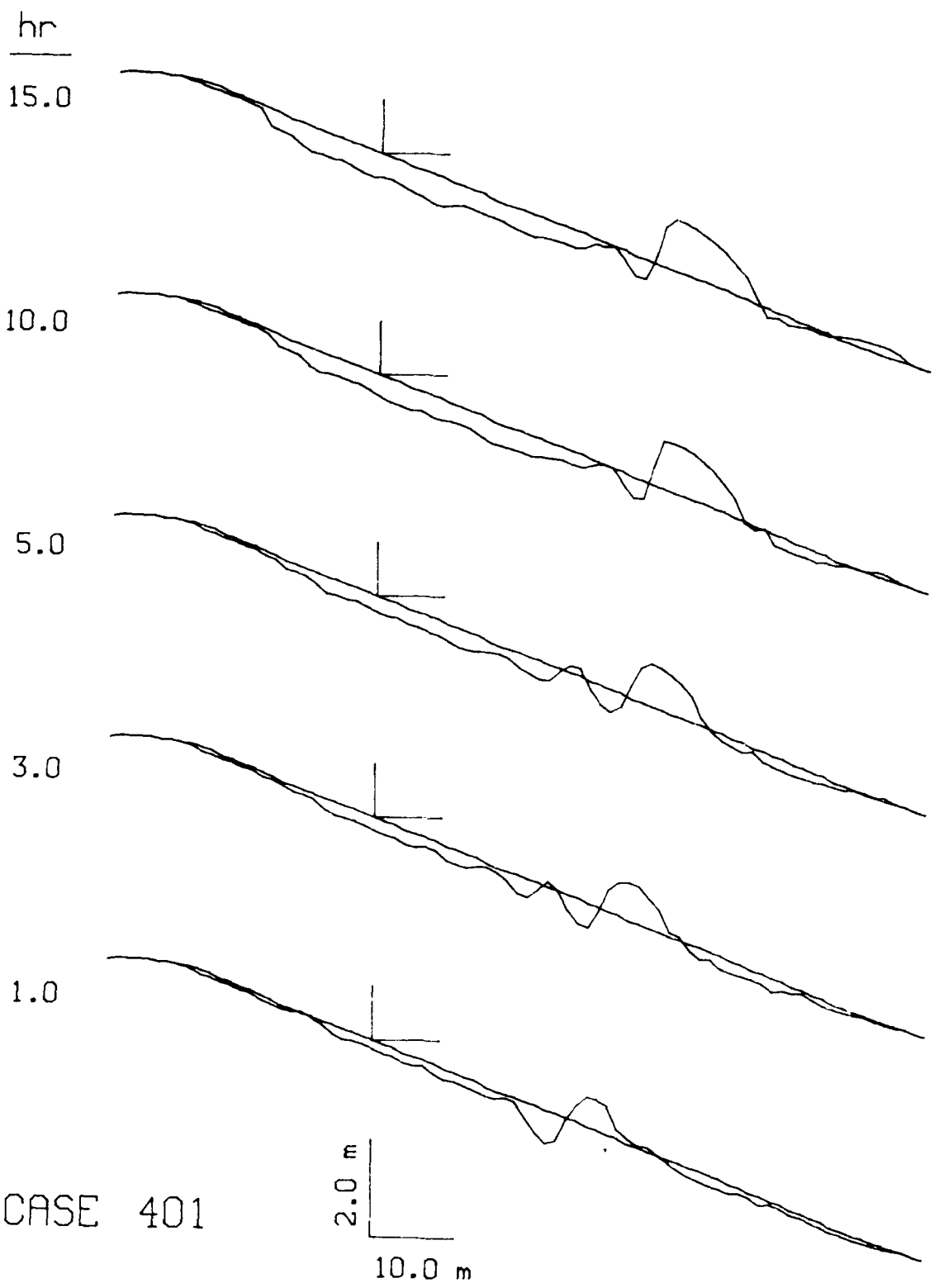

hr
30.0
25.5
20.0
19.0
15.0
CASE 101
2.0 m
10.0 m

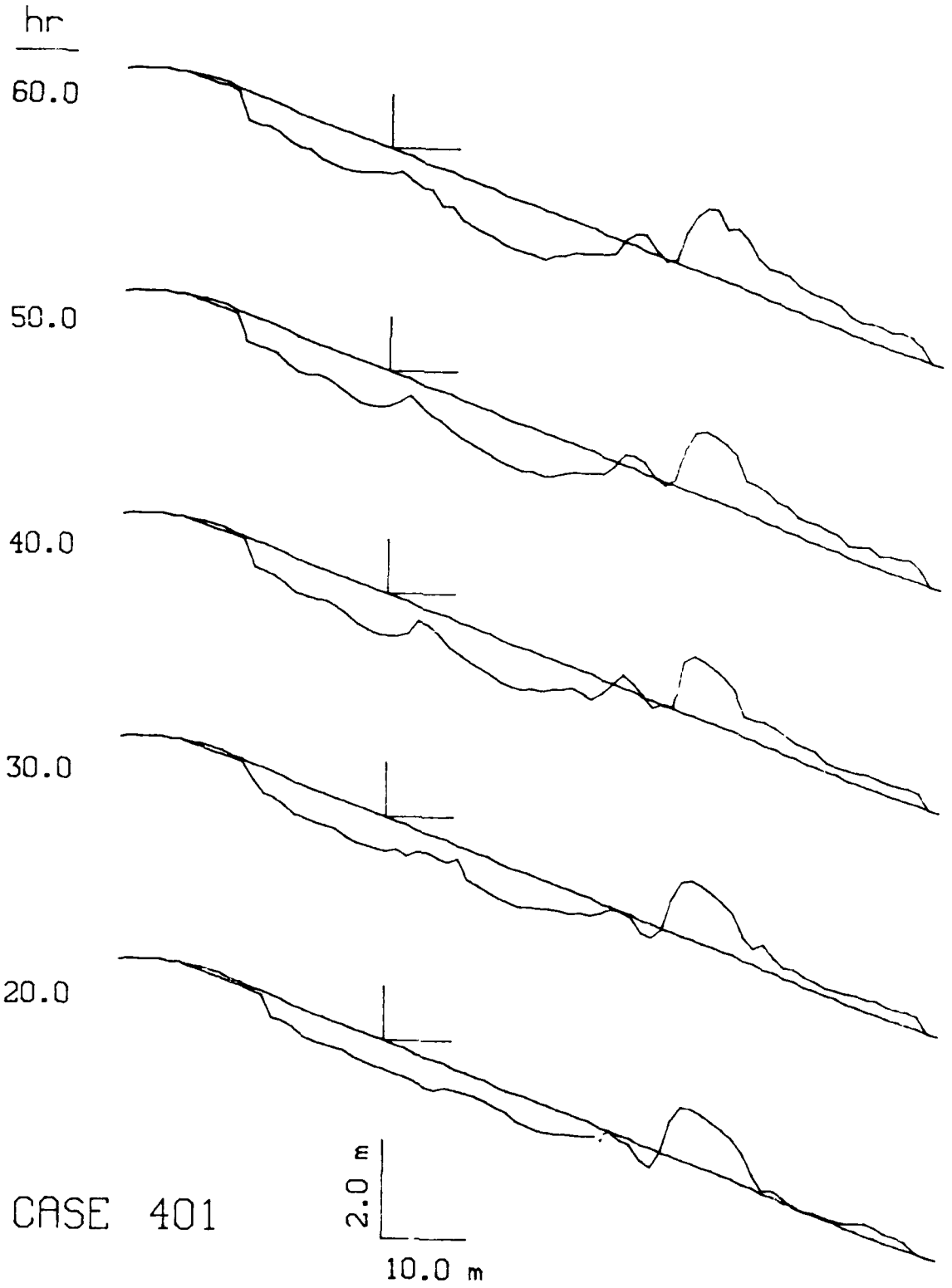

hr
10.0
5.0
3.0
2.0
1.0
CASE 201
2.0 m
10.0 m

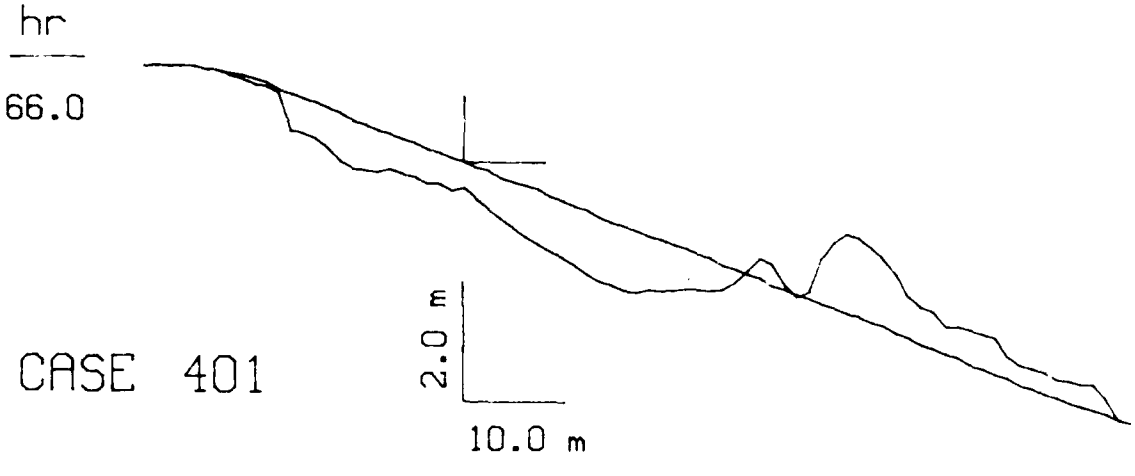

hr
40.0
30.0
20.0
15.0
CASE 201
2.0 m
10.0 m

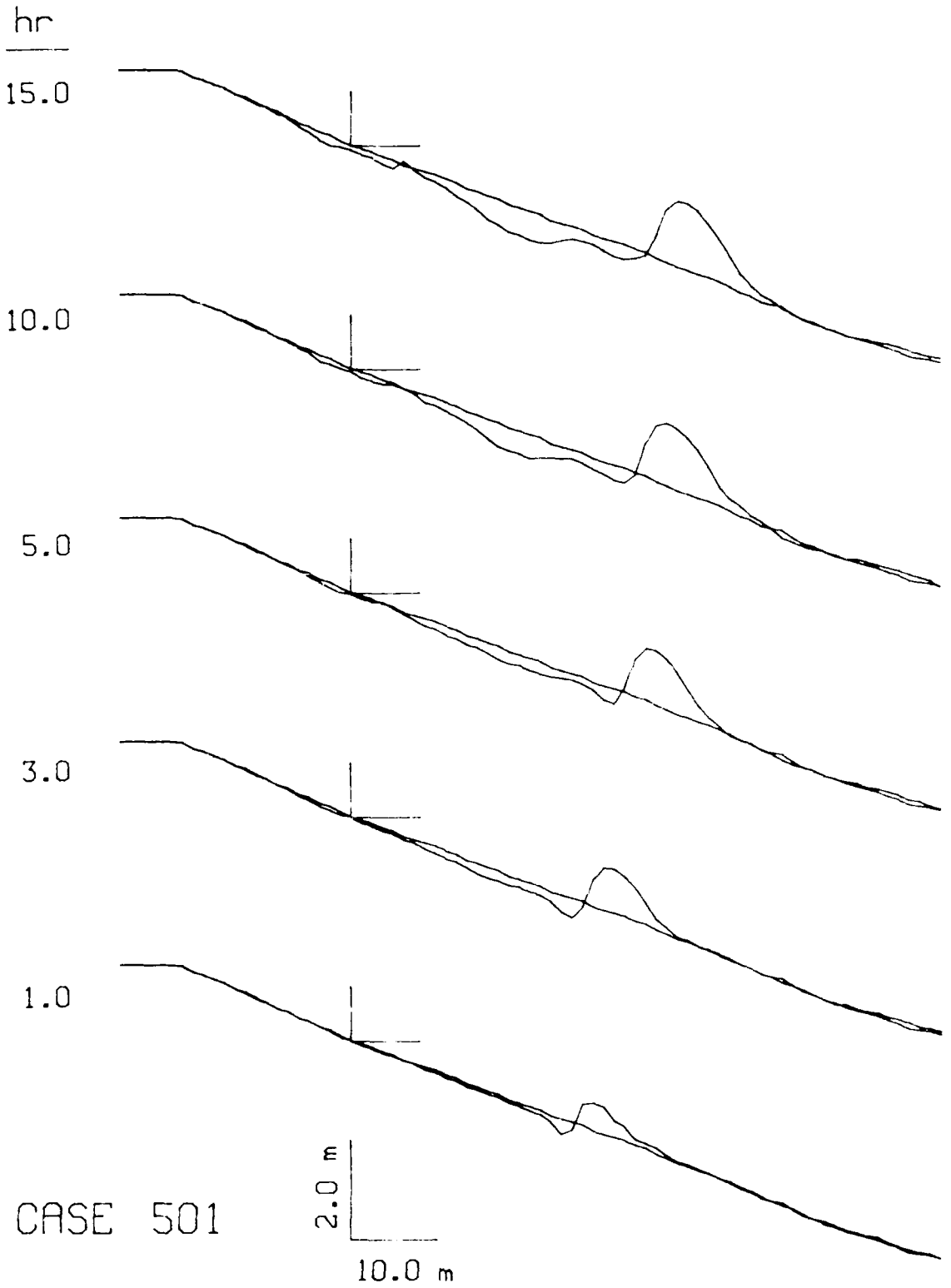

hr
15.0
10.0
5.0
3.0
1.0
CASE 301
2.0 m
10.0 m

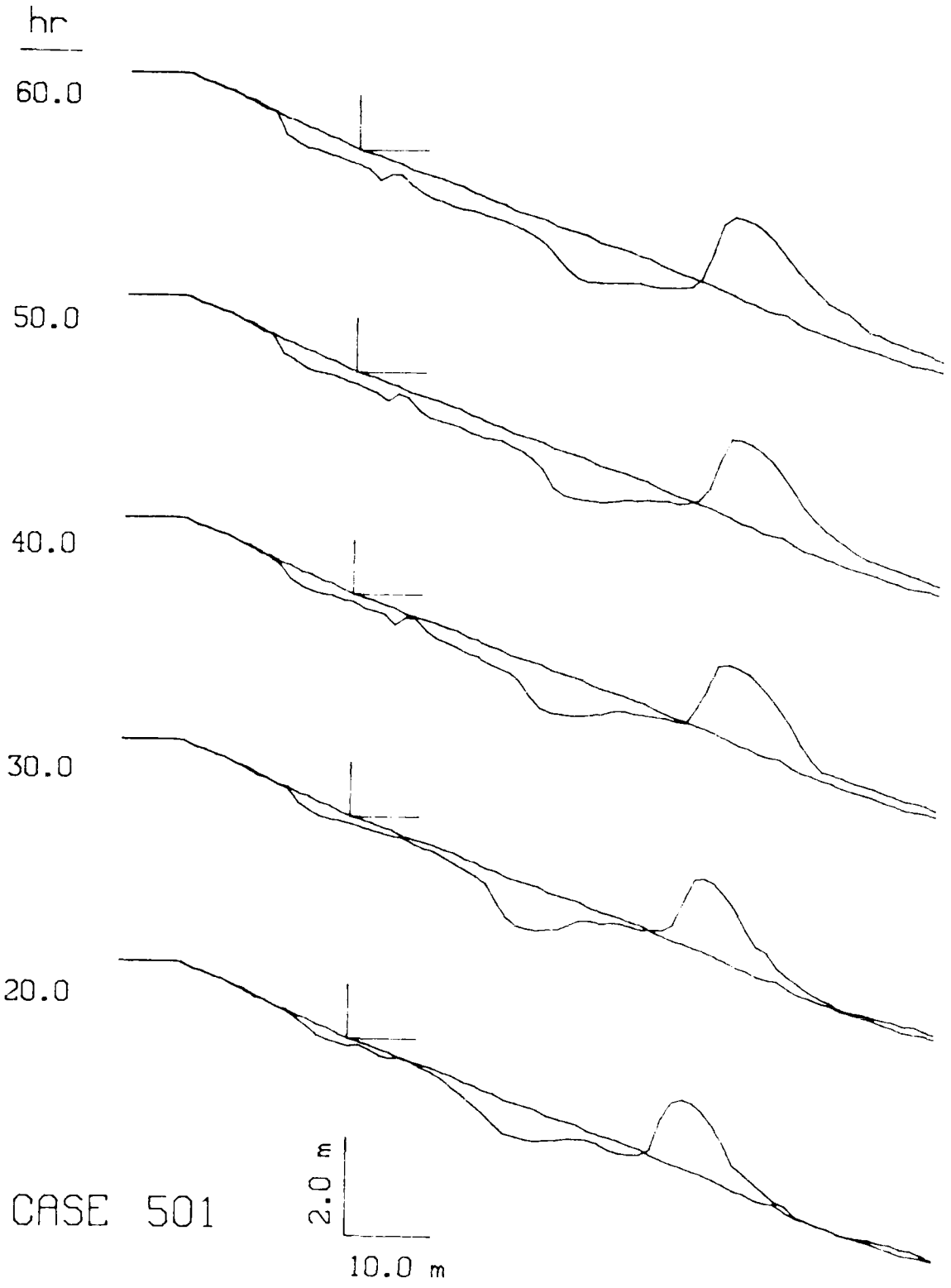

hr
50.0
40.0
30.0
20.0
CASE 301
2.0 m
10.0 m

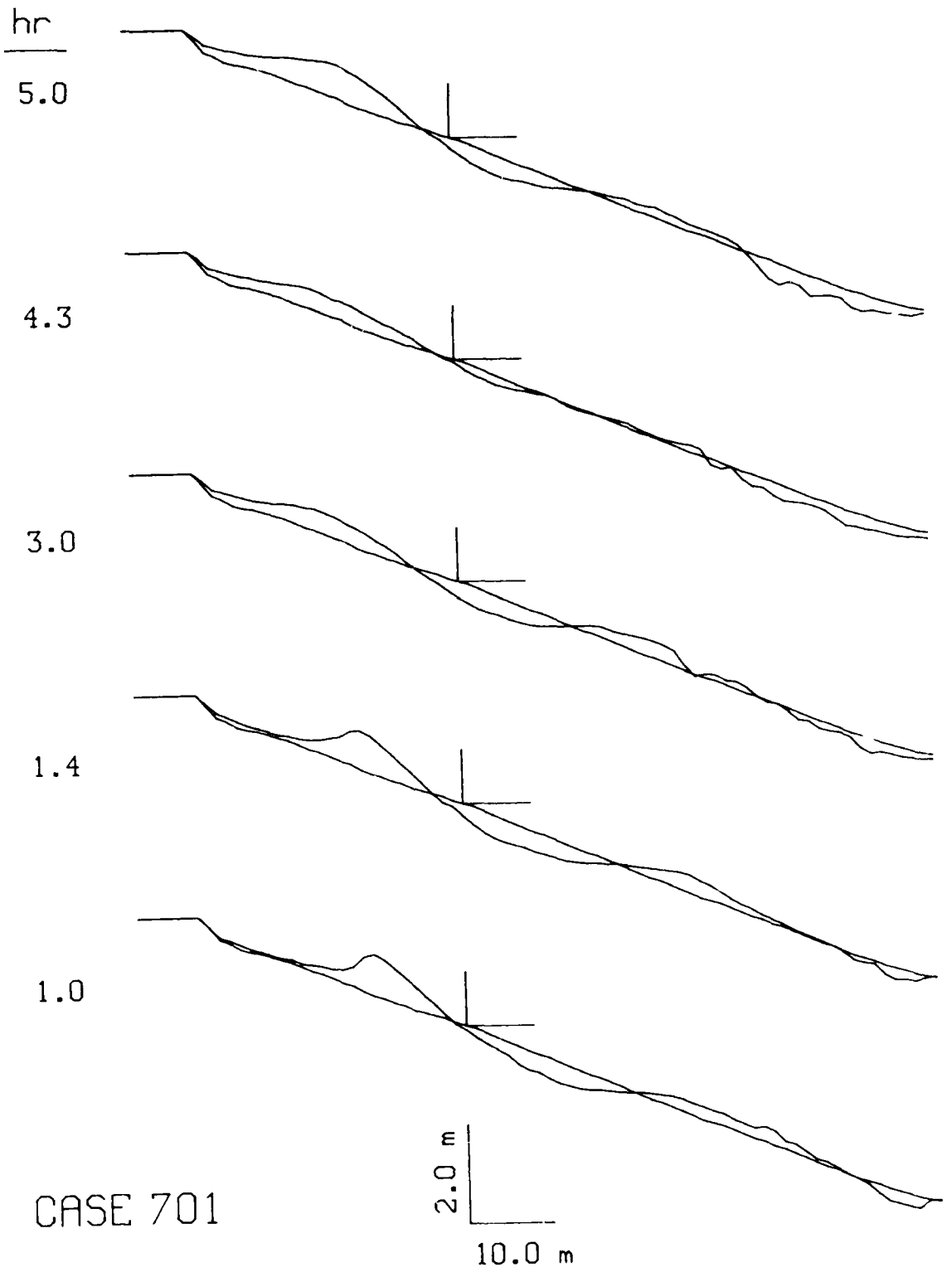

hr
15.0
10.0
5.0
3.0
1.0
CASE 401
2.0 m
10.0 m

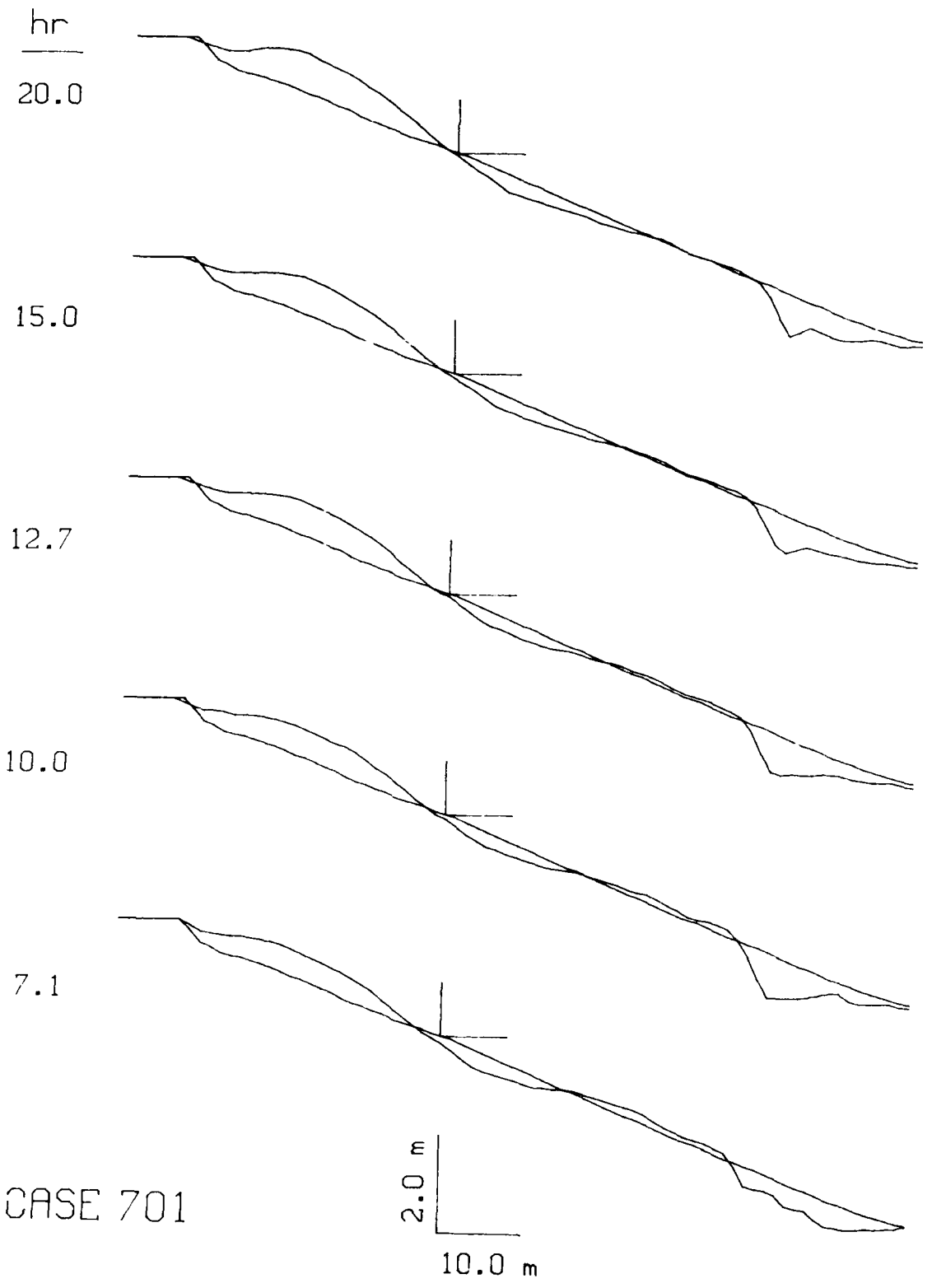

hr
60.0
50.0
40.0
30.0
20.0
CASE 401
2.0 m
10.0 m

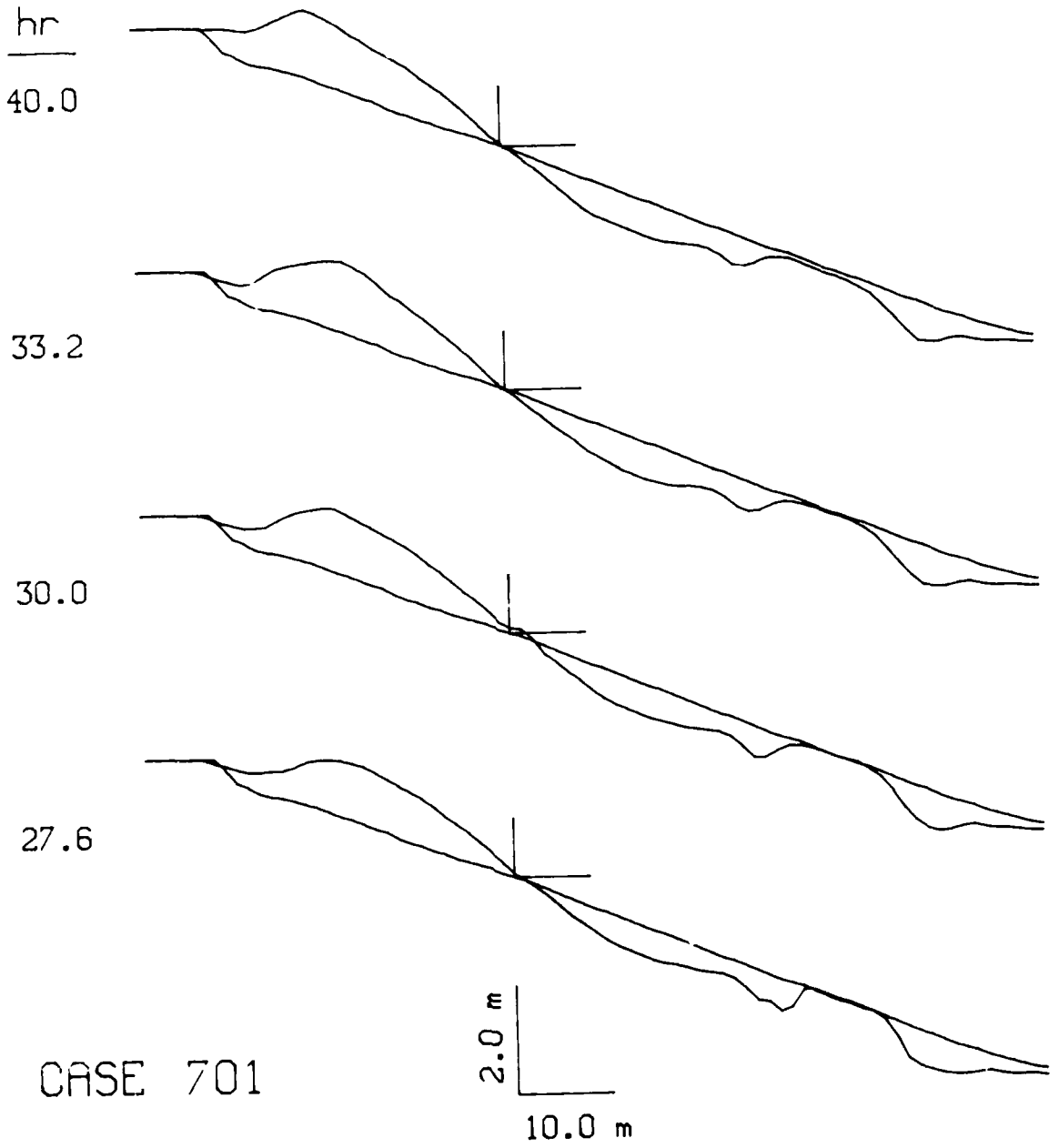

hr
66.0
CASE 401
2.0 m
10.0 m

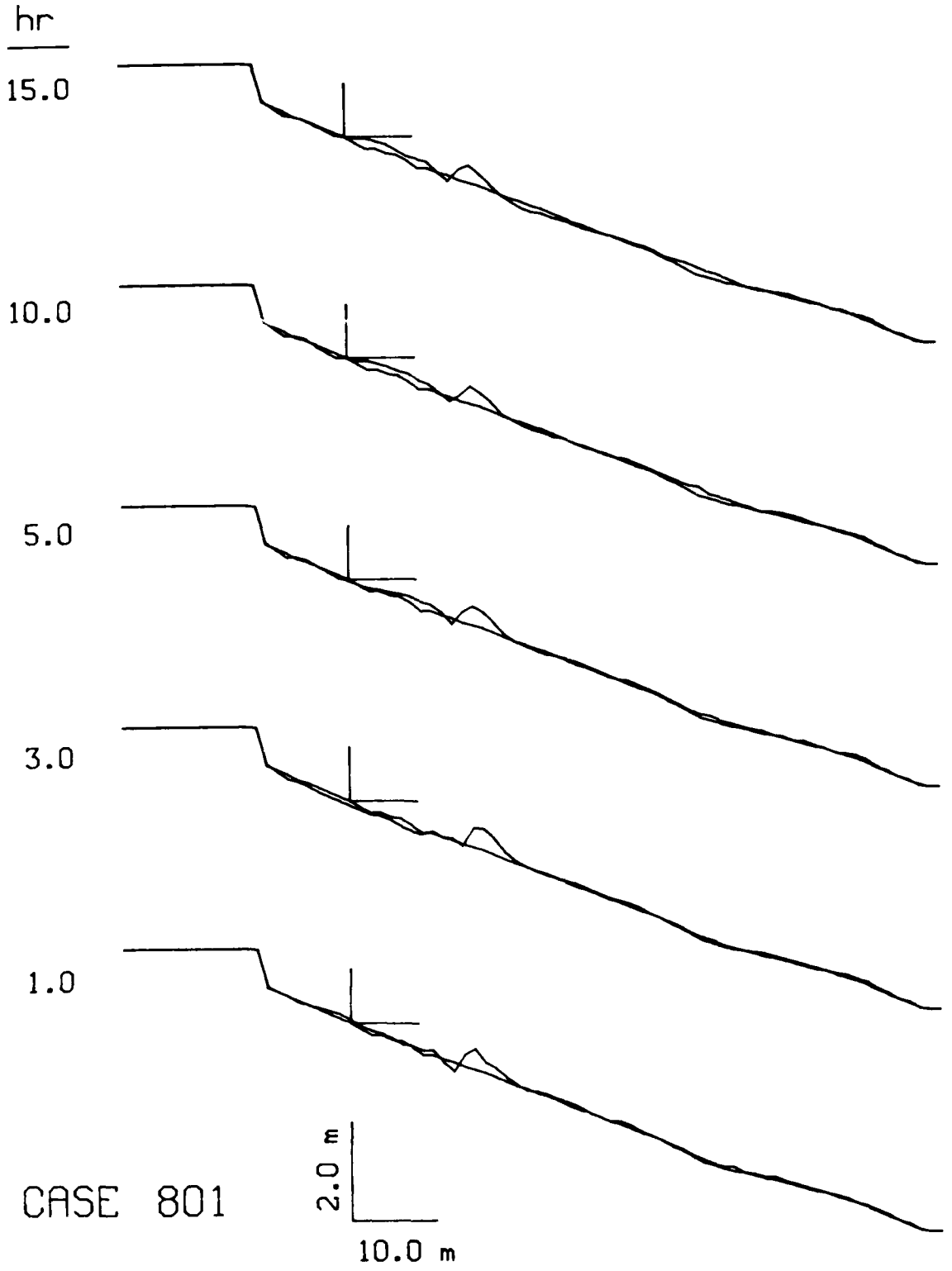

hr
15.0
10.0
5.0
3.0
1.0
CASE 501
2.0 m
10.0 m

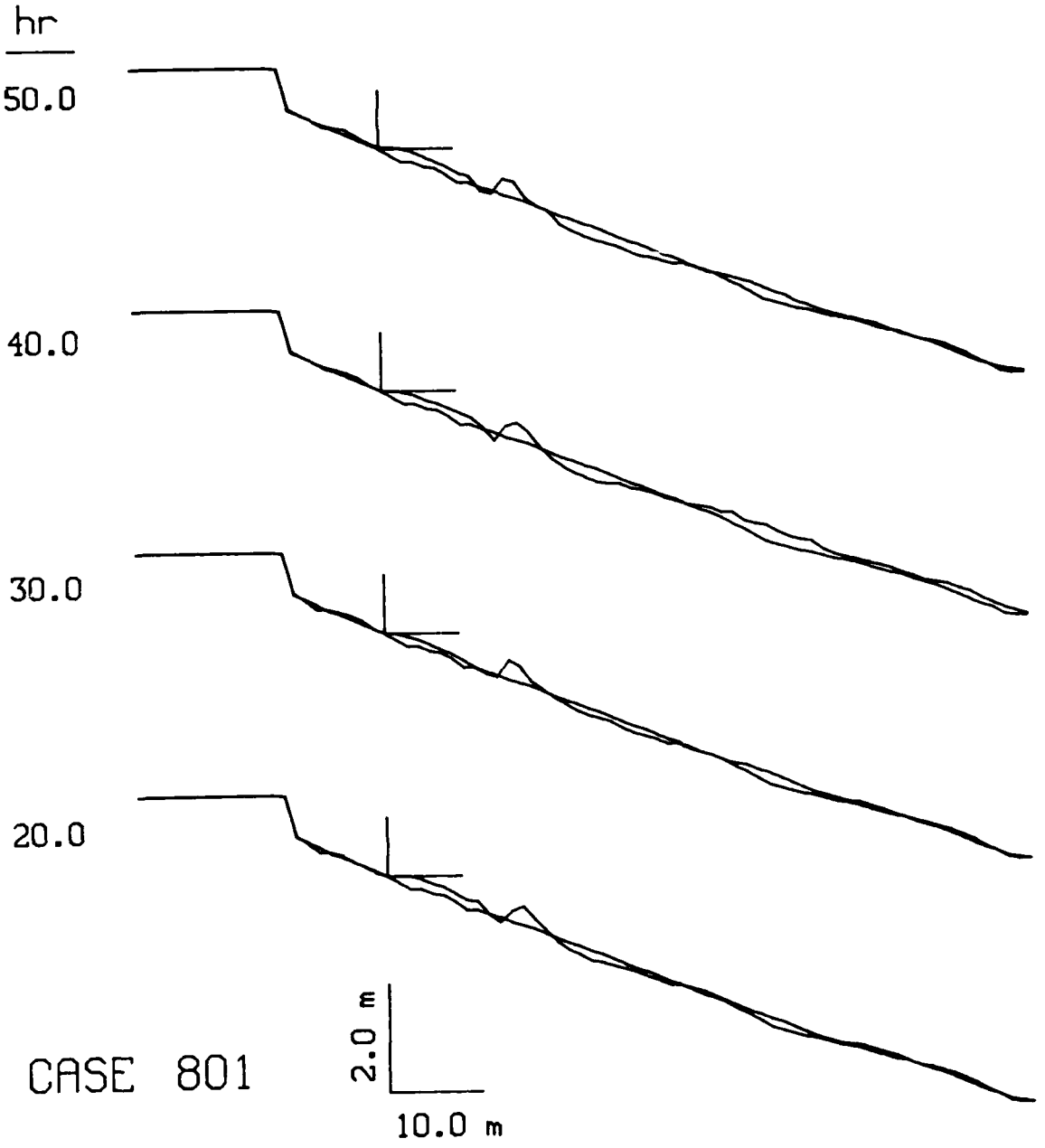

hr
60.0
50.0
40.0
30.0
20.0
CASE 501
ε
2.0
10.0 m

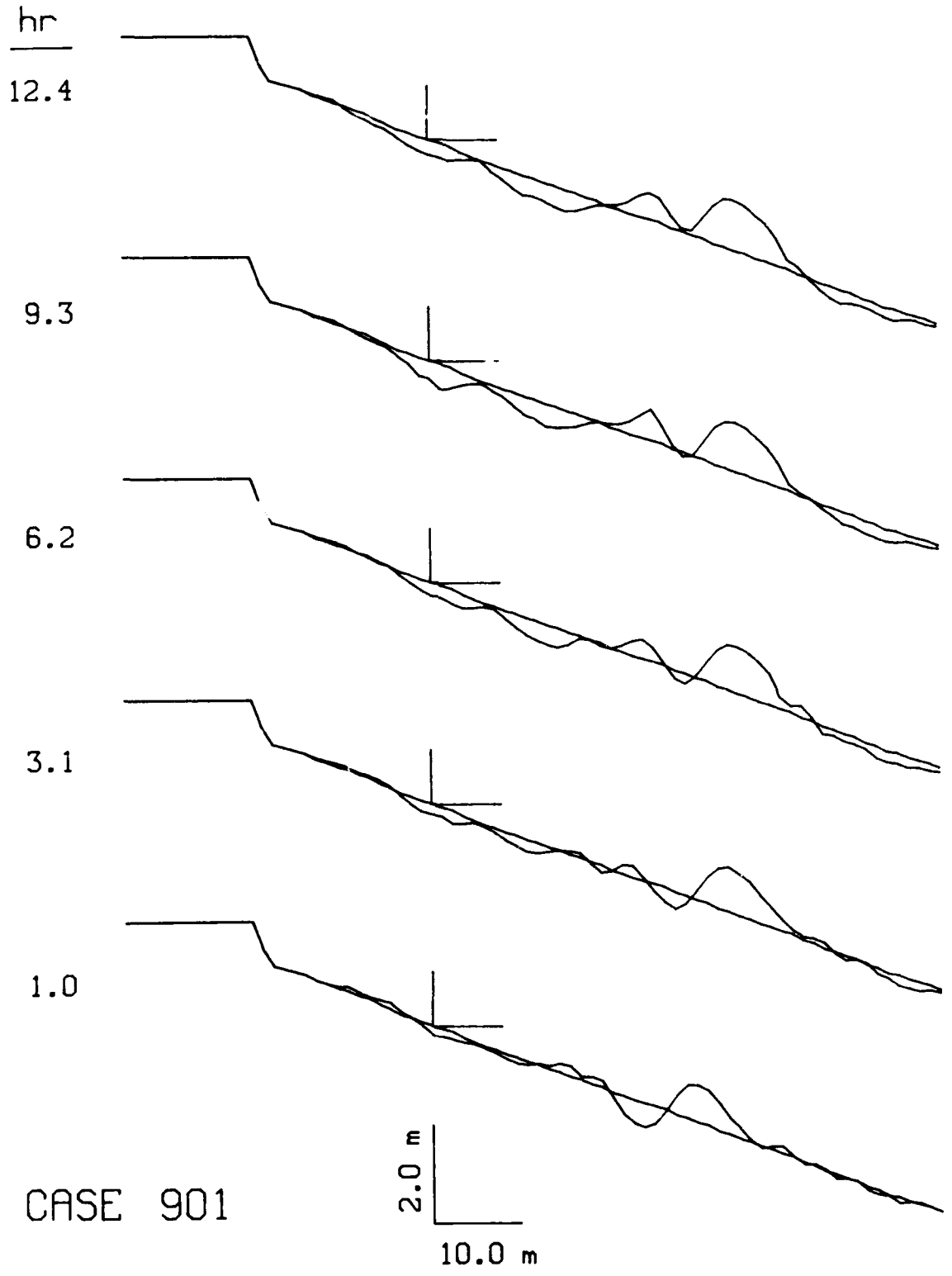

hr
5.0
4.3
3.0
1.4
1.0
2.0 m
10.0 m
CASE 701

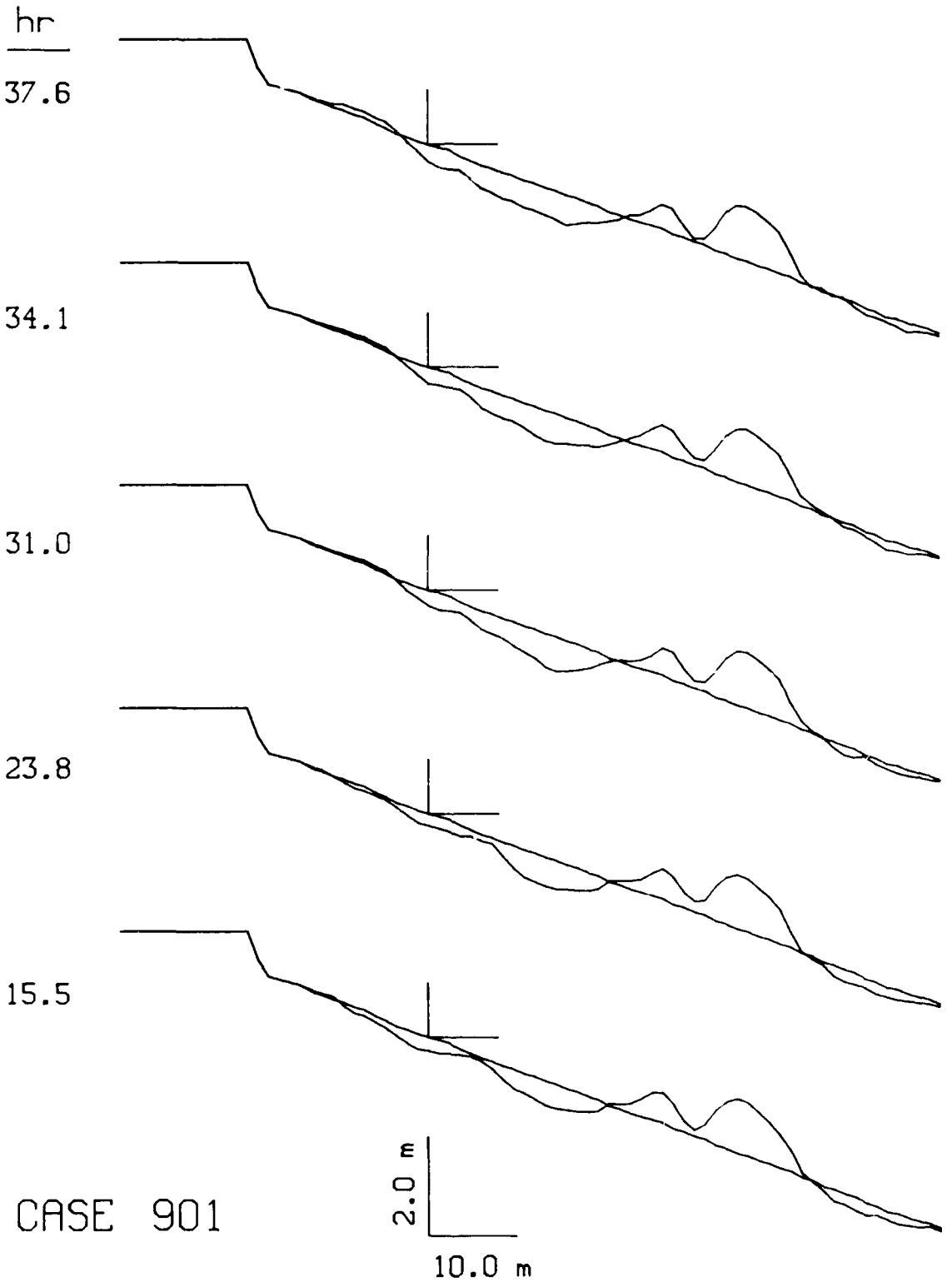

hr
20.0
15.0
12.7
10.0
7.1
CASE 701
2.0 m
10.0 m

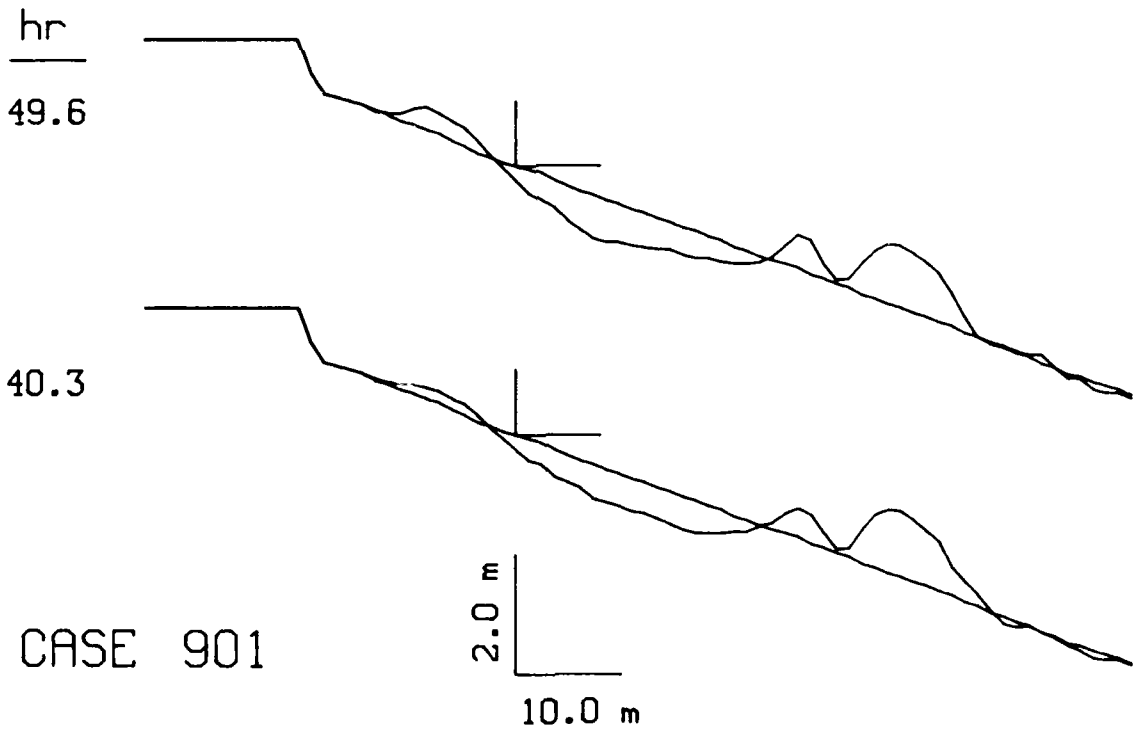

hr
40.0
33.2
30.0
27.6
CASE 701
2.0 m
10.0 m

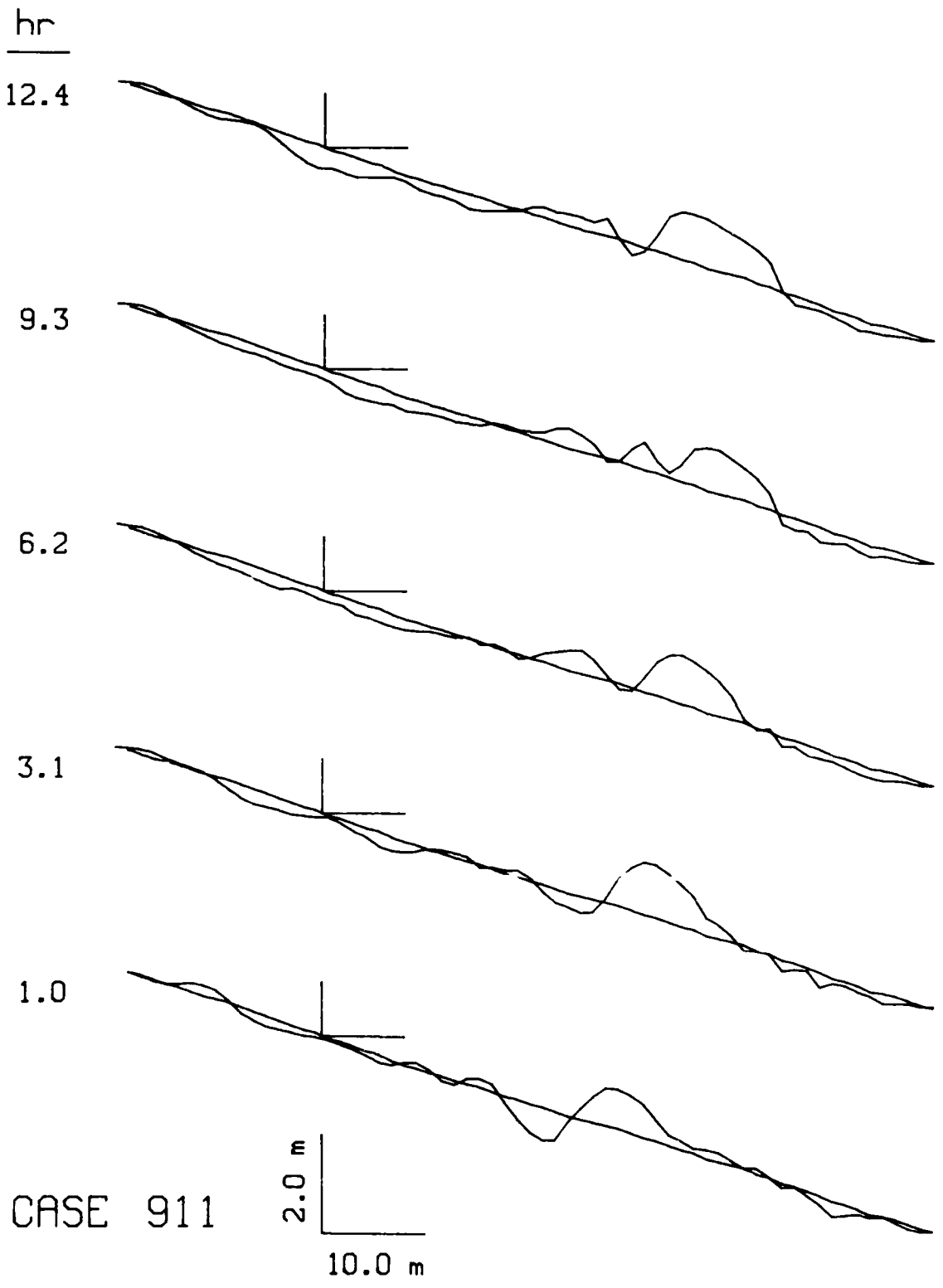

hr
15.0
10.0
5.0
3.0
1.0
CASE 801
2.0 m
10.0 m

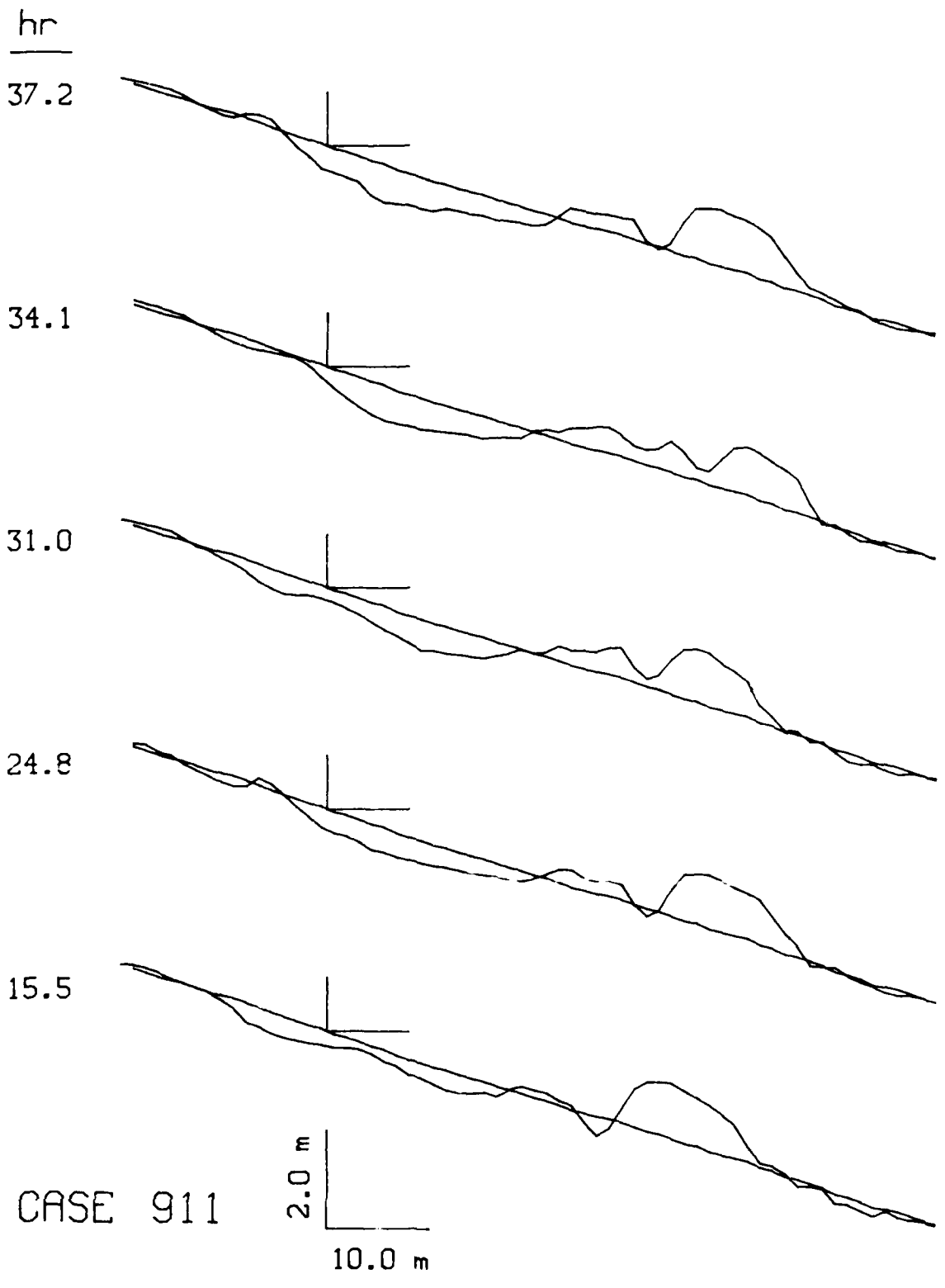

hr
50.0
40.0
30.0
20.0
CASE 801
2.0 m
10.0 m

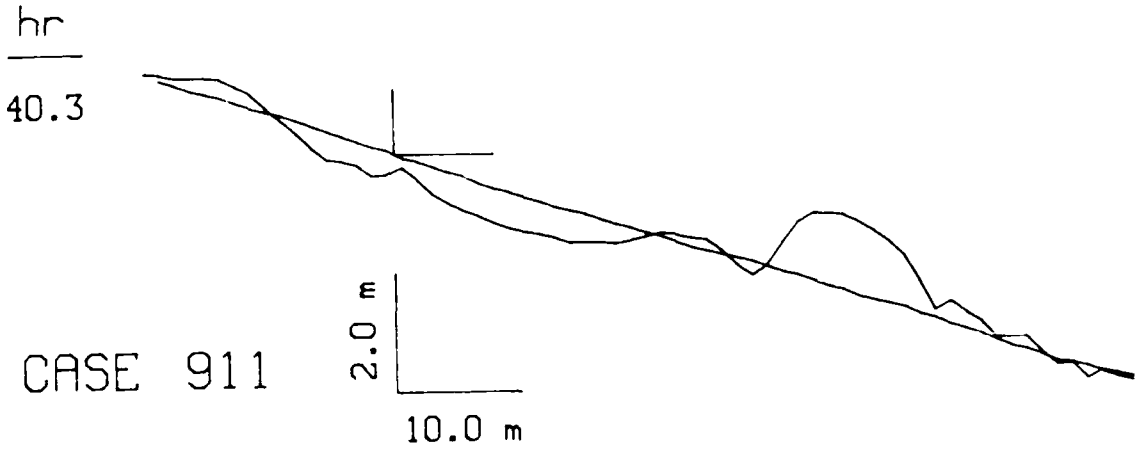

hr
12.4
9.3
6.2
3.1
1.0
CASE 901
2.0 m
10.0 m


hr
37.6
34.1
31.0
23.8
15.5
CASE 901
2.0 m
10.0 m


hr
49.6
40.3
CASE 901
2.0 m
10.0 m


hr
12.4
9.3
6.2
3.1
1.0
CASE 911
2.0 m
10.0 m


hr
37.2
34.1
31.0
24.8
15.5
CASE 911
2.0 m
10.0 m


hr
40.3
2.0 m
CASE 911
10.0 m

APPENDIX C: BEACH PROFILE DATA

1. This appendix gives a listing of profile survey data from the LWT experiments conducted during 1956-1957 and 1962. If the profile was surveyed along three lines, in the listing the result was represented by values from the middle survey for the 0.22-mm sand experiments and by an average value for the 0.44-mm sand experiments. Plots of these data are given in Appendix B. Distance-elevation pairs are given in feet.

2. The format of the data is described in Table C1.

Table C1

Format of Profile Survey Data

Position	Description of Entry	Format
	First Card in Each Record	
1-5	Case number	A5
6-9	Profile survey ordinal number	I4
10	Card number	A1
11-16	Approximate date of run (year, month, day)	I6
17-21	Time of survey in decimal form (e.g., 2550=25.5 hr)	F5.2
22-24	Number of coordinate pairs in the survey	I3
25-29	Minimum elevation in the survey (e.g., 150=15 ft)	F5.1
30-40	Blank	A11
41-80	First four distance-elevation pairs (e.g., [-72,49]=[-72.0 ft, 4.9 ft]	4(F5.0,F5.1)
	Continuation Cards	
1-10	Same as first card	
11-80	Seven distance-elevation pairs	7(F5.0,F5.1)

3. The profile survey data are shown in Tables C2 and C3.

Table C2

Profile Survey Data: 0.22-mm Sand

CASE 100

CE100	11560315	0	77	-150			-72	49	-68	46	-64	45	-60	43
CE100	12	-56	40	-52	38	-48	34	-44	31	-40	30	-36	28	-32	25
CE100	13	-28	21	-24	19	-20	16	-16	13	-12	10	-8	8	-4	4
CE100	14	0	0	4	-4	8	-8	12	-10	16	-13	20	-16	24	-17
CE100	15	28	-21	32	-23	36	-25	40	-28	44	-30	48	-33	52	-35
CE100	16	56	-37	60	-40	64	-42	68	-44	72	-47	76	-49	80	-52
CE100	17	84	-56	88	-59	92	-63	96	-66	100	-70	104	-72	108	-73
CE100	18	112	-77	116	-80	120	-82	124	-86	128	-90	132	-93	136	-95
CE100	19	140	-98	144	-102	148	-105	152	-109	156	-112	160	-115	164	-118
CE100	1A	168	-121	172	-125	176	-129	180	-131	184	-133	188	-135	192	-137
CE100	1B	196	-139	200	-141	204	-143	208	-145	212	-146	216	-147	220	-148
CE100	1C	224	-149	228	-149	232	-150								
CE100	21560315	100	79	-150			-72	49	-68	46	-64	45	-60	43
CE100	22	-56	40	-52	40	-48	38	-44	36	-40	30	-36	22	-32	19
CE100	23	-28	9	-24	8	-20	5	-16	1	-12	-1	-8	3	-4	-5
CE100	24	0	-9	4	-11	8	-13	12	-15	16	-16	20	-18	24	-20
CE100	25	28	-21	32	-23	36	-23	40	-24	44	-25	48	-26	52	-28
CE100	26	56	-29	60	-32	64	-46	68	-54	72	-61	76	-58	80	-48
CE100	27	84	-39	88	-37	92	-39	96	-43	100	-48	104	-53	108	-59
CE100	28	112	-65	116	-70	120	-76	124	-82	128	-85	132	-91	136	-93
CE100	29	140	-97	144	-101	148	-103	152	-107	156	-112	160	-113	164	-118
CE100	2A	168	-121	172	-123	176	-128	180	-129	184	-131	188	-134	192	-137
CE100	2B	196	-141	200	-141	204	-143	208	-144	212	-145	216	-146	220	-146
CE100	2C	224	-146	228	-147	232	-148	236	-148	240	-150				
CE100	31560315	500	78	-150			-72	49	-68	46	-64	46	-60	45
CE100	32	-56	39	-52	31	-48	21	-44	16	-40	12	-36	8	-32	5
CE100	33	-28	0	-24	-2	-20	-5	-16	-9	-12	-11	-8	-13	-4	-14
CE100	34	0	-16	4	-17	8	-19	12	-19	16	-21	20	-23	24	-25
CE100	35	28	-28	32	-31	36	-33	40	-36	44	-37	48	-36	52	-33
CE100	36	56	-32	60	-35	64	-42	68	-47	72	-48	76	-46	80	-47
CE100	37	84	-54	88	-60	92	-62	96	-59	100	-48	104	-42	108	-43
CE100	38	112	-46	116	-48	120	-51	124	-53	128	-56	132	-60	136	-63
CE100	39	140	-69	144	-75	148	-85	152	-98	156	-104	160	-111	164	-116
CE100	3A	168	-120	172	-123	176	-126	180	-130	184	-133	188	-134	192	-137
CE100	3B	196	-139	200	-141	204	-143	208	-145	212	-144	216	-146	220	-146
CE100	3C	224	-148	228	-148	232	-149	236	-150						

(Continued)

Table C2 (Continued)

CE100	41560315	1200	76	-150			-72	37	-68	31	-64	25	-60	19
CE100	42	-56	15	-52	10	-48	6	-44	2	-40	-2	-36	-5	-32	-7
CE100	43	-28	-9	-24	-11	-20	-11	-16	-12	-12	-13	-8	-15	-4	-17
CE100	44	0	-19	4	-21	8	-22	12	-23	16	-24	20	-26	24	-28
CE100	45	28	-30	32	-31	36	-32	40	-34	44	-36	48	-37	52	-37
CE100	46	56	-37	60	-38	64	-40	68	-39	72	-38	76	-39	80	-42
CE100	47	84	-52	88	-59	92	-63	96	-63	100	-53	104	-54	108	-52
CE100	48	112	-44	116	-40	120	-41	124	-43	128	-46	132	-50	136	-52
CE100	49	140	-54	144	-57	148	-62	152	-68	156	-80	160	-95	164	-105
CE100	4A	168	-113	172	-125	176	-128	180	-131	184	-133	188	-135	192	-137
CE100	4B	196	-138	200	-140	204	-142	208	-144	212	-146	216	-147	220	-149
CE100	4C	224	-149	228	-150										
CE100	51560315	1900	76	-150			-72	26	-68	19	-64	12	-60	6
CE100	52	-56	-1	-52	-4	-48	-6	-44	-8	-40	-9	-36	-9	-32	-10
CE100	53	-28	-11	-24	-12	-20	-14	-16	-16	-12	-15	-8	-16	-4	-18
CE100	54	0	-19	4	-21	8	-23	12	-25	16	-24	20	-23	24	-23
CE100	55	28	-24	32	-27	36	-28	40	-30	44	-34	48	-42	52	-43
CE100	56	56	-41	60	-36	64	-34	68	-34	72	-34	76	-36	80	-44
CE100	57	84	-50	88	-47	92	-43	96	-41	100	-48	104	-56	108	-57
CE100	58	112	-46	116	-39	120	-41	124	-43	128	-46	132	-51	136	-53
CE100	59	140	-58	144	-62	148	-66	152	-71	156	-74	160	-80	164	-87
CE100	5A	168	-96	172	-113	176	-123	180	-123	184	-130	188	-136	192	-138
CE100	5B	196	-139	200	-142	204	-143	208	-145	212	-147	216	-149	220	-149
CE100	5C	224	-149	228	-150										
CE100	61560315	2550	77	-150			-72	16	-68	10	-64	5	-60	0
CE100	62	-56	-2	-52	-4	-48	-6	-44	-8	-40	-10	-36	-13	-32	-15
CE100	63	-28	-11	-24	-13	-20	-14	-16	-18	-12	-19	-8	-19	-4	-20
CE100	64	0	-20	4	-21	8	-23	12	-26	16	-27	20	-25	24	-25
CE100	65	28	-26	32	-26	36	-25	40	-26	44	-29	48	-33	52	-36
CE100	66	56	-38	60	-38	64	-37	68	-38	72	-43	76	-43	80	-37
CE100	67	84	-33	88	-29	92	-31	96	-41	100	-54	104	-63	108	-70
CE100	68	112	-74	116	-68	120	-53	124	-46	128	-46	132	-47	136	-50
CE100	69	140	-54	144	-58	148	-63	152	-68	156	-72	160	-77	164	-81
CE100	6A	168	-91	172	-108	176	-121	180	-121	184	-124	188	-129	192	-133
CE100	6B	196	-138	200	-144	204	-148	208	-149	212	-149	216	-149	220	-149
CE100	6C	224	-149	228	-149	232	-150								
CE100	71560315	3000	75	-150			-72	17	-68	10	-64	2	-60	-2
CE100	72	-56	-4	-52	-6	-48	-9	-44	-11	-40	-12	-36	-12	-32	-12
CE100	73	-28	-20	-24	-15	-20	-19	-16	-16	-12	-16	-8	-16	-4	-17
CE100	74	0	-20	4	-22	8	-24	12	-26	16	-30	20	-32	24	-29
CE100	75	28	-26	32	-25	36	-24	40	-23	44	-25	48	-28	52	-32
CE100	76	56	-37	60	-37	64	-35	68	-36	72	-45	76	-43	80	-37
CE100	77	84	-33	88	-30	92	-33	96	-41	100	-56	104	-61	108	-65
CE100	78	112	-60	116	-46	120	-42	124	-42	128	-43	132	-46	136	-53
CE100	79	140	-55	144	-60	148	-64	152	-69	156	-73	160	-78	164	-82
CE100	7A	168	-90	172	-104	176	-118	180	-117	184	-123	188	-128	192	-137
CE100	7B	196	-141	200	-145	204	-147	208	-148	212	-148	216	-149	220	-149
CE100	7C	224	-150												

(Continued)

Table C2 (Continued)

CASE 110

CE110	11560615	0	75	-150			-72	47	-68	45	-64	42	-60	39
CE110	12	-56	37	-52	34	-48	31	-44	29	-40	26	-36	23	-32	21
CE110	13	-28	18	-24	15	-20	13	-16	10	-12	8	-8	5	-4	2
CE110	14	0	0	4	-2	8	-5	12	-7	16	-10	20	-13	24	-15
CE110	15	28	-18	32	-21	36	-23	40	-26	44	-29	48	-31	52	-34
CE110	16	56	-37	60	-39	64	-42	68	-45	72	-47	76	-50	80	-53
CE110	17	84	-55	88	-58	92	-61	96	-63	100	-66	104	-69	108	-71
CE110	18	112	-74	116	-77	120	-79	124	-82	128	-85	132	-87	136	-90
CE110	19	140	-93	144	-95	148	-98	152	-101	156	-103	160	-106	164	-109
CE110	1A	168	-111	172	-114	176	-117	180	-119	184	-122	188	-125	192	-127
CE110	1B	196	-130	200	-133	204	-135	208	-138	212	-141	216	-143	220	-146
CE110	1C	224	-150												
CE110	21560615	100	75	-150			-72	45	-68	41	-64	41	-60	40
CE110	22	-56	39	-52	34	-48	32	-44	28	-40	24	-36	21	-32	20
CE110	23	-28	15	-24	13	-20	11	-16	7	-12	4	-8	3	-4	0
CE110	24	0	-4	4	-6	8	-8	12	-9	16	-12	20	-16	24	-18
CE110	25	28	-21	32	-23	36	-27	40	-29	44	-32	48	-35	52	-37
CE110	26	56	-39	60	-40	64	-45	68	-47	72	-48	76	-51	80	-53
CE110	27	84	-57	88	-60	92	-62	96	-64	100	-67	104	-70	108	-74
CE110	28	112	-77	116	-80	120	-84	124	-88	128	-92	132	-97	136	-99
CE110	29	140	-101	144	-104	148	-107	152	-109	156	-111	160	-117	164	-118
CE110	2A	168	-123	172	-127	176	-132	180	-136	184	-138	188	-139	192	-140
CE110	2B	196	-141	200	-143	204	-145	208	-146	212	-146	216	-147	220	-148
CE110	2C	224	-149												
CE110	31560615	300	75	-150			-72	46	-68	42	-64	40	-60	40
CE110	32	-56	38	-52	35	-48	32	-44	32	-40	28	-36	22	-32	20
CE110	33	-28	16	-24	7	-20	3	-16	0	-12	-3	-8	-5	-4	-8
CE110	34	0	-10	4	-12	8	-14	12	-15	16	-16	20	-18	24	-19
CE110	35	28	-19	32	-21	36	-23	40	-26	44	-27	48	-29	52	-31
CE110	36	56	-39	60	-50	64	-55	68	-57	72	-44	76	-36	80	-36
CE110	37	84	-40	88	-44	92	-47	96	-51	100	-56	104	-62	108	-71
CE110	38	112	-73	116	-80	120	-83	124	-88	128	-92	132	-95	136	-98
CE110	39	140	-100	144	-103	148	-103	152	-109	156	-111	160	-114	164	-118
CE110	3A	168	-120	172	-125	176	-133	180	-133	184	-136	188	-138	192	-140
CE110	3B	196	-142	200	-140	204	-143	208	-144	212	-145	216	-146	220	-147
CE110	3C	224	-148												
CE110	41560615	500	74	-150			-72	45	-68	45	-64	43	-60	39
CE110	42	-56	33	-52	30	-48	25	-44	19	-40	13	-36	10	-32	6
CE110	43	-28	3	-24	0	-20	-3	-16	-6	-12	-8	-8	-10	-4	-12
CE110	44	0	-13	4	-15	8	-17	12	-19	16	-22	20	-24	24	-26
CE110	45	28	-28	32	-30	36	-32	40	-33	44	-30	48	-32	52	-32
CE110	46	56	-35	60	-41	64	-48	68	-51	72	-52	76	-48	80	-44
CE110	47	84	-39	88	-40	92	-46	96	-48	100	-43	104	-43	108	-46
CE110	48	112	-49	116	-52	120	-57	124	-61	128	-76	132	-88	136	-92
CE110	49	140	-98	144	-101	148	-105	152	-108	156	-111	160	-116	164	-130
CE110	4A	168	-130	172	-134	176	-131	180	-131	184	-135	188	-131	192	-140
CE110	4B	196	-140	200	-143	204	-140	208	-143	212	-145	216	-146	220	-147

(Continued)

Table C2 (Continued)

CE110	51560615	1200	75	-150				-72	44	-68	34	-64	29	-60	24
CE110	52	-56	19	-52	14	-48	11	-44	8	-40	6	-36	4	-32	1
CE110	53	-28	0	-24	-2	-20	-5	-16	-6	-12	-8	-8	-9	-4	-10
CE110	54	0	-13	4	-15	8	-17	12	-19	16	-22	20	-23	24	-25
CE110	55	28	-27	32	-28	36	-28	40	-28	44	-29	48	-31	52	-32
CE110	56	56	-31	60	-31	64	-32	68	-37	72	-50	76	-57	80	-54
CE110	57	84	-45	88	-41	92	-46	96	-48	100	-44	104	-39	108	-42
CE110	58	112	-44	116	-48	120	-51	124	-55	128	-59	132	-63	136	-73
CE110	59	140	-90	144	-99	148	-98	152	-109	156	-122	160	-116	164	-118
CE110	5A	168	-121	172	-127	176	-136	180	-135	184	-132	188	-133	192	-137
CE110	5B	196	-138	200	-141	204	-142	208	-144	212	-145	216	-146	220	-148
CE110	5C	224	-149												
CE110	61560615	1975	74	-150				-72	29	-68	23	-64	21	-60	17
CE110	62	-56	13	-52	11	-48	7	-44	2	-40	0	-36	-2	-32	-3
CE110	63	-28	-5	-24	-6	-20	-8	-16	-9	-12	-9	-8	-11	-4	-15
CE110	64	0	-17	4	-19	8	-19	12	-20	16	-20	20	-21	24	-24
CE110	65	28	-26	32	-29	36	-29	40	-27	44	-30	48	-31	52	-31
CE110	66	56	-32	60	-31	64	-30	68	-37	72	-43	76	-43	80	-40
CE110	67	84	-39	88	-44	92	-52	96	-47	100	-39	104	-37	108	-39
CE110	68	112	-43	116	-46	120	-48	124	-51	128	-55	132	-58	136	-60
CE110	69	140	-69	144	-80	148	-100	152	-111	156	-113	160	-122	164	-128
CE110	6A	168	-125	172	-126	176	-129	180	-135	184	-137	188	-138	192	-140
CE110	6B	196	-140	200	-143	204	-144	208	-145	212	-146	216	-147	220	-147
CE110	71560615	2550	74	-150				-72	30	-68	26	-64	20	-60	14
CE110	72	-56	8	-52	4	-48	0	-44	-5	-40	-7	-36	-8	-32	-9
CE110	73	-28	-9	-24	-10	-20	-10	-16	-10	-12	-12	-8	-13	-4	-16
CE110	74	0	-17	4	-17	8	-18	12	-20	16	-21	20	-25	24	-30
CE110	75	28	-30	32	-24	36	-20	40	-19	44	-19	48	-21	52	-31
CE110	76	56	-34	60	-38	64	-42	68	-42	72	-37	76	-34	80	-30
CE110	77	84	-31	88	-38	92	-39	96	-36	100	-35	104	-37	108	-40
CE110	78	112	-44	116	-46	120	-48	124	-52	128	-56	132	-59	136	-71
CE110	79	140	-86	144	-102	148	-113	152	-110	156	-121	160	-117	164	-119
CE110	7A	168	-120	172	-128	176	-127	180	-127	184	-135	188	-135	192	-135
CE110	7B	196	-139	200	-141	204	-144	208	-146	212	-147	216	-148	220	-149
CE110	81560615	3000	73	-150				-72	27	-68	22	-64	14	-60	9
CE110	82	-56	3	-52	-1	-48	-4	-44	-6	-40	-6	-36	-7	-32	-8
CE110	83	-28	-9	-24	-9	-20	-10	-16	-11	-12	-10	-8	-13	-4	-15
CE110	84	0	-17	4	-19	8	-21	12	-22	16	-21	20	-19	24	-19
CE110	85	28	-20	32	-22	36	-26	40	-27	44	-24	48	-26	52	-29
CE110	86	56	-28	60	-27	64	-26	68	-28	72	-31	76	-42	80	-43
CE110	87	84	-38	88	-35	92	-37	96	-40	100	-33	104	-32	108	-36
CE110	88	112	-39	116	-44	120	-47	124	-50	128	-55	132	-59	136	-66
CE110	89	140	-82	144	-99	148	-112	152	-112	156	-116	160	-120	164	-121
CE110	8A	168	-123	172	-124	176	-127	180	-130	184	-133	188	-132	192	-134
CE110	8B	196	-136	200	-142	204	-146	208	-144	212	-147	216	-149		

(Continued)

Table C2 (Continued)

CASE 200

CE200	11560518	0	70	-150			-68	47	-64	44	-60	42	-56	39
CE200	12	-52	36	-48	33	-44	30	-40	28	-36	25	-32	22	-28	19
CE200	13	-24	16	-20	14	-16	11	-12	8	-8	5	-4	2	0	0
CE200	14	4	-2	8	-5	12	-8	16	-11	20	-14	24	-16	28	-19
CE200	15	32	-22	36	-25	40	-28	44	-30	48	-33	52	-36	56	-39
CE200	16	60	-42	64	-44	68	-47	72	-50	76	-53	80	-56	84	-58
CE200	17	88	-61	92	-64	96	-67	100	-70	104	-73	108	-75	112	-78
CE200	18	116	-81	120	-84	124	-87	128	-89	132	-92	136	-95	140	-98
CE200	19	144	-101	148	-103	152	-106	156	-109	160	-112	164	-115	168	-117
CE200	1A	172	-120	176	-123	180	-126	184	-129	188	-131	192	-134	196	-137
CE200	1B	200	-140	204	-143	208	-146								
CE200	21560518	200	70	-150			-68	47	-64	43	-60	40	-56	38
CE200	22	-52	37	-48	34	-44	31	-40	28	-36	25	-32	24	-28	24
CE200	23	-24	26	-20	24	-16	18	-12	14	-8	8	-4	6	0	0
CE200	24	4	-3	8	-5	12	-8	16	-11	20	-12	24	-14	28	-17
CE200	25	32	-20	36	-21	40	-22	44	-23	48	-40	52	-44	56	-37
CE200	26	60	-30	64	-32	68	-34	72	-38	76	-41	80	-43	84	-48
CE200	27	88	-52	92	-60	96	-63	100	-66	104	-70	108	-71	112	-72
CE200	28	116	-74	120	-78	124	-82	128	-85	132	-90	136	-93	140	-96
CE200	29	144	-97	148	-102	152	-104	156	-107	160	-112	164	-114	168	-118
CE200	2A	172	-120	176	-122	180	-128	184	-128	188	-133	192	-139	196	-139
CE200	2B	200	-140	204	-145	208	-147								
CE200	31560518	400	72	-150			-68	47	-64	43	-60	40	-56	39
CE200	32	-52	37	-48	34	-44	29	-40	27	-36	24	-32	23	-28	25
CE200	33	-24	26	-20	25	-16	20	-12	15	-8	9	-4	3	0	0
CE200	34	4	-3	8	-6	12	-9	16	-12	20	-15	24	-17	28	-18
CE200	35	32	-19	36	-19	40	-20	44	-23	48	-41	52	-44	56	-31
CE200	36	60	-29	64	-31	68	-33	72	-37	76	-40	80	-44	84	-47
CE200	37	88	-49	92	-57	96	-63	100	-67	104	-69	108	-73	112	-71
CE200	38	116	-71	120	-78	124	-80	128	-88	132	-91	136	-90	140	-98
CE200	39	144	-99	148	-101	152	-104	156	-104	160	-111	164	-113	168	-117
CE200	3A	172	-120	176	-125	180	-127	184	-127	188	-132	192	-136	196	-139
CE200	3B	200	-142	204	-144	208	-146	212	-146	216	-146				
CE200	41560518	600	70	-150			-68	47	-64	42	-60	40	-56	38
CE200	42	-52	37	-48	34	-44	30	-40	27	-36	25	-32	24	-28	27
CE200	43	-24	27	-20	19	-16	14	-12	11	-8	6	-4	1	0	-2
CE200	44	4	-4	8	-7	12	-9	16	-11	20	-12	24	-14	28	-16
CE200	45	32	-16	36	-17	40	-19	44	-20	48	-34	52	-45	56	-46
CE200	46	60	-36	64	-30	68	-31	72	-33	76	-37	80	-41	84	-44
CE200	47	88	-49	92	-56	96	-64	100	-69	104	-72	108	-70	112	-71
CE200	48	116	-81	120	-81	124	-84	128	-82	132	-89	136	-91	140	-96
CE200	49	144	-97	148	-100	152	-104	156	-104	160	-111	164	-115	168	-118
CE200	4A	172	-120	176	-124	180	-127	184	-130	188	-132	192	-136	196	-139
CE200	4B	200	-143	204	-145	208	-146								

(Continued)

Table C2 (Continued)

CE200	51560518	800	64	-150				-68	47	-64	43	-60	40	-56	39
CE200	52	-52	37	-48	34	-44	30	-40	27	-36	28	-32	27	-28	26
CE200	53	-24	22	-20	17	-16	14	-12	8	-8	4	-4	0	0	-2
CE200	54	4	-5	8	-6	12	-8	16	-9	20	-12	24	-13	28	-14
CE200	55	32	-15	36	-16	40	-18	44	-19	48	-23	52	-39	56	-46
CE200	56	60	-44	64	-33	68	-31	72	-32	76	-35	80	-38	84	-42
CE200	57	88	-48	92	-60	96	-66	100	-72	104	-65	108	-67	112	-82
CE200	58	116	-83	120	-77	124	-81	128	-87	132	-85	136	-98	140	-101
CE200	59	144	-98	148	-97	152	-105	156	-107	160	-109	164	-114	168	-118
CE200	5A	172	-118	176	-123	180	-125	184	-128						
CE200	61560518	900	71	-150				-68	47	-64	43	-60	40	-56	39
CE200	62	-52	37	-48	35	-44	32	-40	29	-36	28	-32	27	-28	28
CE200	63	-24	25	-20	18	-16	14	-12	8	-8	3	-4	0	0	-2
CE200	64	4	-6	8	-6	12	-9	16	-10	20	-11	24	-13	28	-13
CE200	65	32	-15	36	-17	40	-18	44	-21	48	-22	52	-38	56	-47
CE200	66	60	-42	64	-32	68	-30	72	-32	76	-35	80	-38	84	-42
CE200	67	88	-49	92	-62	96	-68	100	-63	104	-64	108	-78	112	-81
CE200	68	116	-78	120	-74	124	-87	128	-81	132	-87	136	-98	140	-97
CE200	69	144	-98	148	-94	152	-105	156	-108	160	-112	164	-115	168	-116
CE200	6A	172	-119	176	-124	180	-124	184	-128	188	-133	192	-136	196	-139
CE200	6B	200	-142	204	-145	208	-146	212	-147						
CE200	81560518	1450	70	-150				-68	47	-64	44	-60	41	-56	38
CE200	82	-52	35	-48	32	-44	29	-40	27	-36	28	-32	28	-28	25
CE200	83	-24	19	-20	13	-16	7	-12	2	-8	-2	-4	-5	0	-8
CE200	84	4	-10	8	-11	12	-11	16	-12	20	-13	24	-13	28	-15
CE200	85	32	-16	36	-17	40	-19	44	-21	48	-22	52	-24	56	-34
CE200	86	60	-44	64	-42	68	-32	72	-30	76	-32	80	-36	84	-41
CE200	87	88	-48	92	-55	96	-66	100	-63	104	-66	108	-72	112	-83
CE200	88	116	-77	120	-85	124	-88	128	-88	132	-93	136	-97	140	-92
CE200	89	144	-95	148	-104	152	-109	156	-105	160	-115	164	-118	168	-120
CE200	8A	172	-125	176	-121	180	-128	184	-130	188	-134	192	-137	196	-140
CE200	8B	200	-143	204	-145	208	-146								
CE200	91560518	1950	70	-150				-68	47	-64	44	-60	41	-56	38
CE200	92	-52	36	-48	33	-44	30	-40	28	-36	29	-32	29	-28	26
CE200	93	-24	19	-20	13	-16	6	-12	0	-8	-3	-4	-5	0	-7
CE200	94	4	-8	8	-8	12	-9	16	-11	20	-12	24	-14	28	-15
CE200	95	32	-16	36	-18	40	-19	44	-20	48	-22	52	-22	56	-33
CE200	96	60	-39	64	-35	68	-29	72	-27	76	-30	80	-34	84	-39
CE200	97	88	-40	92	-44	96	-56	100	-73	104	-68	108	-71	112	-86
CE200	98	116	-83	120	-81	124	-91	128	-87	132	-85	136	-87	140	-100
CE200	99	144	-109	148	-104	152	-108	156	-116	160	-114	164	-115	168	-121
CE200	9A	172	-122	176	-123	180	-127	184	-130	188	-133	192	-136	196	-141
CE200	9B	200	-146	204	-143	208	-146								

(Continued)

Table C2 (Continued)

CE200	101560518	2350	70	-150			-68	47	-64	44	-60	41	-56	38
CE200	102	-52	35	-48	32	-44	28	-40	27	-36	28	-32	28	-28	23
CE200	103	-24	18	-20	11	-16	4	-12	0	-8	-4	-4	-5	0	-7
CE200	104	4	-8	8	-8	12	-9	16	-10	20	-10	24	-12	28	-14
CE200	105	32	-17	36	-18	40	-19	44	-20	48	-21	52	-22	56	-29
CE200	106	60	-38	64	-37	68	-29	72	-28	76	-31	80	-35	84	-40
CE200	107	88	-42	92	-50	96	-57	100	-74	104	-78	108	-74	112	-80
CE200	108	116	-87	120	-83	124	-81	128	-81	132	-85	136	-104	140	-104
CE200	109	144	-99	148	-109	152	-113	156	-118	160	-117	164	-118	168	-117
CE200	10A	172	-122	176	-124	180	-127	184	-131	188	-134	192	-137	196	-142
CE200	10B	200	-145	204	-146	208	-146								
CE200	121560518	2850	71	-150			-68	47	-64	44	-60	41	-56	38
CE200	122	-52	34	-48	32	-44	29	-40	28	-36	28	-32	28	-28	25
CE200	123	-24	20	-20	14	-16	7	-12	1	-8	-2	-4	-4	0	-6
CE200	124	4	-7	8	-7	12	-8	16	-10	20	-11	24	-12	28	-14
CE200	125	32	-16	36	-16	40	-18	44	-20	48	-21	52	-22	56	-25
CE200	126	60	-36	64	-36	68	-29	72	-27	76	-27	80	-34	84	-41
CE200	127	88	-41	92	-57	96	-70	100	-72	104	-68	108	-71	112	-73
CE200	128	116	-75	120	-76	124	-83	128	-99	132	-98	136	-98	140	-110
CE200	129	144	-107	148	-103	152	-116	156	-116	160	-117	164	-117	168	-121
CE200	12A	172	-122	176	-124	180	-126	184	-130	188	-133	192	-135	196	-143
CE200	12B	200	-146	204	-146	208	-144	212	-147						
CE200	131560518	3450	72	-150			-68	47	-64	44	-60	41	-56	37
CE200	132	-52	34	-48	32	-44	29	-40	28	-36	28	-32	29	-28	26
CE200	133	-24	23	-20	17	-16	11	-12	5	-8	0	-4	-3	0	-5
CE200	134	4	-6	8	-7	12	-9	16	-10	20	-11	24	-12	28	-14
CE200	135	32	-16	36	-16	40	-17	44	-20	48	-21	52	-22	56	-28
CE200	136	60	-40	64	-40	68	-32	72	-30	76	-32	80	-36	84	-39
CE200	137	88	-45	92	-47	96	-53	100	-61	104	-67	108	-70	112	-73
CE200	138	116	-91	120	-96	124	-86	128	-97	132	-105	136	-100	140	-107
CE200	139	144	-114	148	-114	152	-111	156	-115	160	-114	164	-119	168	-122
CE200	13A	172	-121	176	-124	180	-125	184	-129	188	-131	192	-137	196	-145
CE200	13B	200	-145	204	-145	208	-145	212	-146	216	-146				
CE200	141560518	4000	72	-150			-68	47	-64	44	-60	41	-56	38
CE200	142	-52	34	-48	32	-44	30	-40	29	-36	30	-32	31	-28	28
CE200	143	-24	24	-20	19	-16	12	-12	6	-8	0	-4	-3	0	-6
CE200	144	4	-7	8	-8	12	-8	16	-10	20	-11	24	-12	28	-14
CE200	145	32	-15	36	-17	40	-18	44	-20	48	-22	52	-22	56	-27
CE200	146	60	-36	64	-40	68	-34	72	-29	76	-30	80	-35	84	-40
CE200	147	88	-44	92	-46	96	-50	100	-55	104	-69	108	-84	112	-78
CE200	148	116	-83	120	-93	124	-99	128	-88	132	-97	136	-108	140	-103
CE200	149	144	-109	148	-113	152	-113	156	-112	160	-117	164	-119	168	-121
CE200	14A	172	-122	176	-123	180	-127	184	-129	188	-134	192	-138	196	-143
CE200	14B	200	-144	204	-145	208	-146	212	-146	216	-147				

(Continued)

Table C2 (Continued)

CE200	151560518	4600	68	-150			-68	47	-64	44	-60	41	-56	38
CE200	152	-52	34	-48	31	-44	29	-40	28	-36	29	-32	30	-28	28
CE200	153	-24	22	-20	17	-16	10	-12	2	-8	0	-4	-3	0	-5
CE200	154	4	-6	8	-6	12	-7	16	-9	20	-10	24	-10	28	-12
CE200	155	32	-14	36	-15	40	-17	44	-18	48	-19	52	-21	56	-26
CE200	156	60	-43	64	-42	68	-35	72	-28	76	-31	80	-34	84	-38
CE200	157	88	-40	92	-43	96	-53	100	-73	104	-78	108	-76	112	-83
CE200	158	116	-88	120	-81	124	-89	128	-100	132	-97	136	-102	140	-108
CE200	159	144	-107	148	-113	152	-112	156	-117	160	-118	164	-121	168	-121
CE200	15A	172	-122	176	-122	180	-125	184	-130	188	-134	192	-137	196	-141
CE200	15B	200	-143												

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CE300	11561128	0	76	-140			-92	63	-88	61	-84	59	-80	57
CE300	12	-76	55	-72	52	-68	48	-64	45	-60	42	-56	39	-52	36
CE300	13	-48	34	-44	30	-40	27	-36	24	-32	21	-28	18	-24	16
CE300	14	-20	13	-16	10	-12	7	-8	5	-4	2	0	0	4	-2
CE300	15	8	-5	12	-7	16	-10	20	-12	24	-15	28	-18	32	-20
CE300	16	36	-23	40	-25	44	-28	48	-31	52	-33	56	-36	60	-38
CE300	17	64	-41	68	-44	72	-46	76	-49	80	-51	84	-54	88	-56
CE300	18	92	-59	96	-61	100	-64	104	-66	108	-69	112	-71	116	-74
CE300	19	120	-77	124	-80	128	-82	132	-85	136	-88	140	-90	144	-93
CE300	1A	148	-96	152	-99	156	-103	160	-106	164	-109	168	-112	172	-115
CE300	1B	176	-119	180	-122	184	-125	188	-128	192	-131	196	-133	200	-136
CE300	1C	204	-139	208	-140										
CE300	21561128	100	80	-140			-84	59	-80	57	-76	55	-72	52
CE300	22	-68	48	-64	45	-60	42	-56	39	-52	36	-48	34	-44	30
CE300	23	-40	24	-36	18	-32	15	-28	11	-24	6	-20	3	-16	0
CE300	24	-12	-2	-8	-3	-4	-6	0	-8	4	-10	8	-12	12	-13
CE300	25	16	-14	20	-16	24	-18	28	-20	32	-22	36	-24	40	-24
CE300	26	44	-25	48	-28	52	-30	56	-30	60	-32	64	-38	68	-50
CE300	27	72	-65	76	-73	80	-73	84	-71	88	-57	92	-48	96	-44
CE300	28	100	-44	104	-47	108	-51	112	-53	116	-56	120	-61	124	-66
CE300	29	128	-70	132	-75	136	-79	140	-82	144	-89	148	-93	152	-96
CE300	2A	156	-99	160	-102	164	-106	168	-110	172	-114	176	-119	180	-122
CE300	2B	184	-125	188	-129	192	-132	196	-135	200	-137	204	-138	208	-138
CE300	2C	212	-138	216	-139	220	-139	224	-140	228	-140	232	-140		
CE300	31561128	300	78	-140			-84	59	-80	57	-76	55	-72	52
CE300	32	-68	49	-64	45	-60	43	-56	40	-52	36	-48	28	-44	22
CE300	33	-40	15	-36	9	-32	4	-28	0	-24	-3	-20	-5	-16	-7
CE300	34	-12	-9	-8	-10	-4	-10	0	-11	4	-12	8	-15	12	-19
CE300	35	16	-19	20	-20	24	-21	28	-21	32	-22	36	-24	40	-25
CE300	36	44	-26	48	-26	52	-26	56	-26	60	-25	64	-27	68	-33
CE300	37	72	-39	76	-42	80	-53	84	-69	88	-81	92	-82	96	-79
CE300	38	100	-67	104	-53	108	-44	112	-42	116	-42	120	-45	124	-50
CE300	39	128	-54	132	-60	136	-63	140	-66	144	-71	148	-75	152	-81
CE300	3A	156	-88	160	-97	164	-103	168	-108	172	-112	176	-117	180	-122
CE300	3B	184	-127	188	-129	192	-132	196	-134	200	-135	204	-136	208	-138
CE300	3C	212	-138	216	-139	220	-139	224	-140						

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Table C2 (Continued)

CE300	41561128	500	80	-140				-84	59	-80	57	-76	55	-72	52
CE300	42	-68	48	-64	44	-60	44	-56	42	-52	30	-48	22	-44	15
CE300	43	-40	7	-36	1	-32	-3	-28	-5	-24	-6	-20	-7	-16	-8
CE300	44	-12	-9	-8	-10	-4	-11	0	-12	4	-14	8	-17	12	-19
CE300	45	16	-19	20	-20	24	-22	28	-24	32	-24	36	-24	40	-25
CE300	46	44	-25	48	-25	52	-25	56	-26	60	-27	64	-28	68	-33
CE300	47	72	-39	76	-40	80	-39	84	-43	88	-55	92	-66	96	-75
CE300	48	100	-82	104	-82	108	-76	112	-62	116	-48	120	-43	124	-42
CE300	49	128	-45	132	-49	136	-52	140	-57	144	-61	148	-65	152	-70
CE300	4A	156	-74	160	-83	164	-94	168	-103	172	-109	176	-115	180	-121
CE300	4B	184	-124	188	-128	192	-130	196	-132	200	-134	204	-134	208	-134
CE300	4C	212	-136	216	-138	220	-138	224	-139	228	-139	232	-140		
CE300	51561128	1000	80	-140				-84	59	-80	57	-76	55	-72	52
CE300	52	-68	48	-64	47	-60	21	-56	13	-52	7	-48	2	-44	-3
CE300	53	-40	-5	-36	-7	-32	-8	-28	-9	-24	-9	-20	-10	-16	-11
CE300	54	-12	-13	-8	-14	-4	-16	0	-19	4	-19	8	-20	12	-22
CE300	55	16	-24	20	-26	24	-27	28	-28	32	-28	36	-29	40	-29
CE300	56	44	-30	48	-32	52	-34	56	-41	60	-49	64	-46	68	-40
CE300	57	72	-35	76	-33	80	-35	84	-38	88	-45	92	-54	96	-61
CE300	58	100	-66	104	-74	108	-77	112	-75	116	-69	120	-59	124	-49
CE300	59	128	-44	132	-45	136	-46	140	-49	144	-52	148	-55	152	-59
CE300	5A	156	-62	160	-65	164	-69	168	-74	172	-84	176	-98	180	-112
CE30C	5B	184	-119	188	-125	192	-129	196	-133	200	-135	204	-136	208	-137
CE30J	5C	212	-138	216	-138	220	-138	224	-139	228	-139	232	-140		
CE300	61561128	1500	80	-140				-84	59	-80	57	-76	55	-72	52
CE300	62	-68	48	-64	20	-60	12	-56	1	-52	-2	-48	-3	-44	-4
CE300	63	-40	-5	-36	-5	-32	-6	-28	-8	-24	-9	-20	-12	-16	-13
CE300	64	-12	-13	-8	-15	-4	-18	0	-19	4	-21	8	-22	12	-20
CE300	65	16	-20	20	-22	24	-23	28	-23	32	-24	36	-25	40	-27
CE300	66	44	-31	48	-37	52	-42	56	-46	60	-48	64	-46	68	-45
CE300	67	72	-45	76	-41	80	-37	84	-36	88	-37	92	-40	96	-44
CE300	68	100	-50	104	-57	108	-66	112	-69	116	-62	120	-51	124	-45
CE300	69	128	-43	132	-45	136	-48	140	-50	144	-53	148	-58	152	-61
CE300	6A	156	-65	160	-69	164	-73	168	-77	172	-82	176	-91	180	-100
CE300	6B	184	-111	188	-120	192	-126	196	-131	200	-133	204	-134	208	-136
CE300	6C	212	-138	216	-138	220	-138	224	-139	228	-139	232	-140		
CE300	91561128	2000	81	-140				-84	59	-80	57	-76	55	-72	52
CE300	92	-68	42	-64	16	-60	5	-56	-1	-52	-3	-48	-5	-44	-5
CE300	93	-40	-6	-36	-8	-32	-10	-28	-10	-24	-10	-20	-11	-16	-12
CE300	94	-12	-13	-8	-16	-4	-19	0	-21	4	-19	8	-19	12	-20
CE300	95	16	-20	20	-21	24	-21	28	-20	32	-20	36	-21	40	-23
CE300	96	44	-29	48	-34	52	-39	56	-42	60	-46	64	-47	68	-55
CE300	97	72	-54	76	-45	80	-37	84	-34	88	-35	92	-39	96	-43
CE300	98	100	-51	104	-61	108	-69	112	-67	116	-56	120	-46	124	-44
CE300	99	128	-44	132	-47	136	-49	140	-51	144	-54	148	-59	152	-62
CE300	9A	156	-66	160	-70	164	-73	168	-78	172	-83	176	-90	180	-97
CE300	9B	184	-106	188	-116	192	-125	196	-132	200	-135	204	-137	208	-137
CE300	9C	212	-137	216	-137	220	-137	224	-137	228	-138	232	-139	236	-140

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Table C2 (Continued)

CE300	101561128	3000	81	-140			-84	59	-80	57	-76	55	-72	53
CE300	102	-68	25	-64	17	-60	10	-56	3	-52	-2	-48	-6	-44	-8
CE300	103	-40	-9	-36	-10	-32	-12	-28	-14	-24	-15	-20	-13	-16	-14
CE300	104	-12	-14	-8	-16	-4	-21	0	-26	4	-30	8	-31	12	-28
CE300	105	16	-25	20	-25	24	-25	28	-27	32	-31	36	-24	40	-24
CE300	106	44	-29	48	-34	52	-36	56	-39	60	-40	64	-42	68	-46
CE300	107	72	-51	76	-50	80	-44	84	-38	88	-35	92	-37	96	-40
CE300	108	100	-44	104	-52	108	-61	112	-69	116	-65	120	-53	124	-46
CE300	109	128	-42	132	-44	136	-47	140	-49	144	-52	148	-56	152	-61
CE300	10A	156	-65	160	-71	164	-74	168	-78	172	-82	176	-88	180	-96
CE300	10B	184	-106	188	-116	192	-125	196	-130	200	-135	204	-137	208	-138
CE300	10C	212	-139	216	-139	220	-139	224	-139	228	-139	232	-139	236	-140
CE300	111561128	4000	81	-140			-84	59	-80	57	-76	55	-72	42
CE300	112	-68	21	-64	13	-60	9	-56	3	-52	-1	-48	-4	-44	-6
CE300	113	-40	-8	-36	-8	-32	-9	-28	-10	-24	-11	-20	-12	-16	-13
CE300	114	-12	-16	-8	-23	-4	-28	0	-27	4	-33	8	-39	12	-35
CE300	115	16	-30	20	-28	24	-26	28	-24	32	-28	36	-28	40	-25
CE300	116	44	-24	48	-27	52	-32	56	-37	60	-41	64	-43	68	-46
CE300	117	72	-52	76	-52	80	-46	84	-38	88	-36	92	-36	96	-39
CE300	118	100	-44	104	-50	108	-57	112	-68	116	-66	120	-57	124	-49
CE300	119	128	-45	132	-44	136	-46	140	-49	144	-52	148	-55	152	-59
CE300	11A	156	-62	160	-67	164	-71	168	-76	172	-81	176	-86	180	-91
CE300	11B	184	-98	188	-110	192	-122	196	-129	200	-136	204	-138	208	-138
CE300	11C	212	-138	216	-138	220	-138	224	-138	228	-138	232	-139	236	-140
CE300	121561128	5000	81	-140			-84	59	-80	57	-76	56	-72	36
CE300	122	-68	26	-64	18	-60	12	-56	4	-52	-2	-48	-5	-44	-7
CE300	123	-40	-9	-36	-9	-32	-10	-28	-11	-24	-13	-20	-14	-16	-14
CE300	124	-12	-15	-8	-18	-4	-21	0	-24	4	-29	8	-38	12	-36
CE300	125	16	-32	20	-32	24	-33	28	-33	32	-34	36	-34	40	-33
CE300	126	44	-32	48	-30	52	-29	56	-33	60	-39	64	-44	68	-49
CE300	127	72	-53	76	-52	80	-46	84	-37	88	-35	92	-37	96	-39
CE300	128	100	-42	104	-46	108	-52	112	-60	116	-70	120	-73	124	-72
CE300	129	128	-63	132	-53	136	-48	140	-46	144	-47	148	-49	152	-52
CE300	12A	156	-55	160	-57	164	-60	168	-63	172	-67	176	-70	180	-75
CE300	12B	184	-81	188	-90	192	-100	196	-117	200	-127	204	-134	208	-137
CE300	12C	212	-138	216	-138	220	-138	224	-138	228	-138	232	-139	236	-140

(Continued)

Table C2 (Continued)

CASE 400

CE400	11561228		0	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	12	-76	52	-72	50	-68	45	-64	42	-60	39	-56	36	-52	33
CE400	13	-48	30	-44	27	-40	23	-36	20	-32	18	-28	16	-24	13
CE400	14	-20	11	-16	9	-12	7	-8	4	-4	2	0	0	4	-3
CE400	15	8	-6	12	-8	16	-11	20	-13	24	-16	28	-19	32	-22
CE400	16	36	-25	40	-27	44	-30	48	-33	52	-35	56	-38	60	-41
CE400	17	64	-44	68	-47	72	-49	76	-52	80	-54	84	-57	88	-59
CE400	18	92	-62	96	-65	100	-68	104	-72	108	-75	112	-78	116	-80
CE400	19	120	-82	124	-84	128	-87	132	-91	136	-93	140	-96	144	-99
CE400	1A	148	-103	152	-107	156	-111	160	-114	164	-117	168	-119	172	-121
CE400	1B	176	-124	180	-128	184	-131	188	-133	192	-137	196	-139	200	-141
CE400	1C	204	-142	208	-143	212	-143	216	-143	220	-143	224	-142	228	-143
CE400	1D	232	-144	236	-144	240	-145								
CE400	21561228		100	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	22	-76	52	-72	50	-68	45	-64	42	-60	39	-56	36	-52	33
CE400	23	-48	30	-44	26	-40	21	-36	17	-32	14	-28	10	-24	6
CE400	24	-20	3	-16	1	-12	-1	-8	-4	-4	-6	0	-8	4	-10
CE400	25	8	-13	12	-15	16	-17	20	-19	24	-22	28	-24	32	-25
CE400	26	36	-29	40	-35	44	-39	48	-39	52	-34	56	-34	60	-40
CE400	27	64	-47	68	-58	72	-68	76	-70	80	-70	84	-63	88	-57
CE400	28	92	-51	96	-46	100	-45	104	-48	108	-51	112	-55	116	-60
CE400	29	120	-65	124	-70	128	-75	132	-80	136	-85	140	-90	144	-95
CE400	2A	148	-100	152	-105	156	-109	160	-113	164	-115	168	-119	172	-121
CE400	2B	176	-123	180	-126	184	-130	188	-132	192	-136	196	-139	200	-141
CE400	2C	204	-142	208	-142	212	-142	216	-142	220	-142	224	-143	228	-143
CE400	2D	232	-144	236	-144	240	-145								
CE400	31561228		300	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	32	-76	52	-72	50	-68	46	-64	43	-60	40	-56	35	-52	30
CE400	33	-48	23	-44	18	-40	13	-36	8	-32	4	-28	2	-24	1
CE400	34	-20	-1	-16	-3	-12	-6	-8	-8	-4	-10	0	-12	4	-15
CE400	35	8	-17	12	-18	16	-21	20	-24	24	-25	28	-24	32	-26
CE400	36	36	-31	40	-36	44	-39	48	-41	52	-38	56	-34	60	-34
CE400	37	64	-39	68	-44	72	-49	76	-57	80	-64	84	-70	88	-72
CE400	38	92	-73	96	-75	100	-70	104	-61	108	-52	112	-46	116	-46
CE400	39	120	-48	124	-52	128	-57	132	-62	136	-67	140	-72	144	-79
CE400	3A	148	-84	152	-94	156	-101	160	-109	164	-113	168	-117	172	-121
CE400	3B	176	-123	180	-126	184	-129	188	-132	192	-134	196	-137	200	-138
CE400	3C	204	-141	208	-142	212	-142	216	-142	220	-143	224	-143	228	-143
CE400	3D	232	-144	236	-144	240	-145								

(Continued)

Table C? (Continued)

CE400	41561228		500	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	42	-76	52	-72	49	-68	43	-64	31	-60	16	-56	14	-52	11
CE400	43	-48	9	-44	7	-40	6	-36	4	-32	3	-28	1	-24	0
CE400	44	-20	-1	-16	-3	-12	-5	-8	-6	-4	-8	0	-11	4	-13
CE400	45	8	-15	12	-17	16	-20	20	-22	24	-25	28	-26	32	-26
CE400	46	36	-29	40	-33	44	-36	48	-39	52	-40	56	-41	60	-42
CE400	47	64	-43	68	-43	72	-43	76	-46	80	-52	84	-58	88	-63
CE400	48	92	-70	96	-75	100	-79	104	-79	108	-80	112	-79	116	-74
CE400	49	120	-68	124	-58	128	-54	132	-54	136	-56	140	-61	144	-65
CE400	4A	148	-70	152	-75	156	-81	160	-89	164	-96	168	-104	172	-112
CE400	4B	176	-119	180	-122	184	-126	188	-130	192	-132	196	-135	200	-137
CE400	4C	204	-140	208	-141	212	-142	216	-142	220	-143	224	-143	228	-143
CE400	4D	232	-144	236	-144	240	-145								
CE400	51561228		1000	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	52	-76	52	-72	50	-68	43	-64	25	-60	20	-56	18	-52	13
CE400	53	-48	9	-44	6	-40	3	-36	1	-32	0	-28	-3	-24	-5
CE400	54	-20	-6	-16	-8	-12	-11	-8	-13	-4	-17	0	-18	4	-17
CE400	55	8	-19	12	-23	16	-26	20	-28	24	-29	28	-29	32	-30
CE400	56	36	-32	40	-35	44	-38	48	-41	52	-43	56	-44	60	-44
CE400	57	64	-45	68	-46	72	-48	76	-50	80	-51	84	-53	88	-56
CE400	58	92	-61	96	-66	100	-73	104	-77	108	-81	112	-83	116	-84
CE400	59	120	-84	124	-73	128	-61	132	-51	136	-51	140	-52	144	-57
CE400	5A	148	-61	152	-64	156	-70	160	-75	164	-81	168	-86	172	-93
CE400	5B	176	-99	180	-104	184	-112	188	-120	192	-126	196	-130	200	-135
CE400	5C	204	-139	208	-141	212	-142	216	-143	220	-143	224	-143	228	-143
CE400	5D	232	-144	236	-144	240	-145								
CE400	61561228		1500	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	62	-76	52	-72	50	-68	43	-64	25	-60	17	-56	11	-52	6
CE400	63	-48	2	-44	0	-40	0	-36	-2	-32	-4	-28	-7	-24	-8
CE400	64	-20	-10	-16	-12	-12	-15	-8	-17	-4	-18	0	-20	4	-21
CE400	65	8	-23	12	-25	16	-28	20	-29	24	-30	28	-30	32	-32
CE400	66	36	-34	40	-36	44	-39	48	-41	52	-43	56	-44	60	-45
CE400	67	64	-46	68	-47	72	-48	76	-50	80	-53	84	-55	88	-58
CE400	68	92	-61	96	-62	100	-67	104	-72	108	-79	112	-84	116	-89
CE400	69	120	-90	124	-89	128	-80	132	-65	136	-58	140	-51	144	-52
CE400	6A	148	-55	152	-59	156	-63	160	-68	164	-73	168	-79	172	-84
CE400	6B	176	-90	180	-96	184	-101	188	-106	192	-112	196	-120	200	-130
CE400	6C	204	-136	208	-141	212	-144	216	144	220	-144	224	-144	228	-144
CE400	6D	232	-144	236	-144	240	-145								

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Table C2 (Continued)

CE400	71561228	2000	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	72	-76	52	-72	48	-68	43	-64	15	-60	10	-56	6	-52	6
CE400	73	-48	1	-44	0	-40	-2	-36	-4	-32	-6	-28	-8	-24	-10
CE400	74	-20	-12	-16	-13	-12	-14	-8	-17	-4	-21	0	-21	4	-23
CE400	75	8	-24	12	-26	16	-28	20	-29	24	-30	28	-31	32	-33
CE400	76	36	-35	40	-37	44	-38	48	-40	52	-42	56	-43	60	-43
CE400	77	64	-44	68	-45	72	-47	76	-49	80	-51	84	-53	88	-57
CE400	78	92	-58	96	-62	100	-66	104	-70	108	-74	112	-81	116	-86
CE400	79	120	-89	124	-91	128	-92	132	-85	136	-72	140	-58	144	-51
CE400	7A	148	-52	152	-55	156	-59	160	-64	164	-69	168	-74	172	-78
CE400	7B	176	-83	180	-89	184	-95	188	-100	192	-105	196	-113	200	-121
CE400	7C	204	-129	208	-137	212	-141	216	-143	220	-143	224	-143	228	-143
CE400	7D	232	-144	236	-144	240	-145								
CE400	81561228	3000	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	82	-76	52	-72	48	-68	43	-64	16	-60	5	-56	1	-52	-1
CE400	83	-48	-2	-44	-4	-40	-6	-36	-9	-32	-8	-28	-10	-24	-11
CE400	84	-20	-15	-16	-19	-12	-21	-8	-22	-4	-19	0	-20	4	-25
CE400	85	8	-30	12	-33	16	-34	20	-34	24	-33	28	-32	32	-29
CE400	86	36	-32	40	-36	44	-38	48	-39	52	-39	56	-37	60	-37
CE400	87	64	-38	68	-41	72	-46	76	-51	80	-56	84	-60	88	-62
CE400	88	92	-63	96	-64	100	-66	104	-70	108	-73	112	-79	116	-83
CE400	89	120	-90	124	-93	128	-93	132	-92	136	-90	140	-74	144	-55
CE400	8A	148	-51	152	-52	156	-55	160	-59	164	-63	168	-68	172	-73
CE400	8B	176	-78	180	-82	184	-87	188	-92	192	-97	196	-103	200	-109
CE400	8C	204	-119	208	-127	212	-140	216	-139	220	-142	224	-143	228	-143
CE400	8D	232	-144	236	-144	240	-145								
CE400	91561228	4000	84	-145			-92	54	-88	54	-84	54	-80	54
CE400	92	-76	52	-72	49	-68	14	-64	7	-60	1	-56	0	-52	-1
CE400	93	-48	-2	-44	-5	-40	-9	-36	-9	-32	-6	-28	-11	-24	-15
CE400	94	-20	-19	-16	-20	-12	-22	-8	-14	-4	-15	0	-20	4	-26
CE400	95	8	-30	12	-34	16	-39	20	-43	24	-45	28	-45	32	-45
CE400	96	36	-43	40	-45	44	-45	48	-37	52	-34	56	-32	60	-35
CE400	97	64	-39	68	-46	72	-52	76	-56	80	-58	84	-60	88	-61
CE400	98	92	-62	96	-62	100	-64	104	-66	108	-71	112	-74	116	-79
CE400	99	120	-82	124	-86	128	-88	132	-91	136	-91	140	-87	144	-75
CE400	9A	148	-57	152	-51	156	-51	160	-54	164	-59	168	-64	172	-68
CE400	9B	176	-72	180	-77	184	-82	188	-87	192	-93	196	-98	200	-103
CE400	9C	204	-110	208	-115	212	-123	216	-130	220	-136	224	-140	228	-143
CE400	9D	232	-144	236	-144	240	-145								

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(Sheet 14 of 17)

Table C2 (Continued)

CASE 500

CE500	11570311		0	84	-150			-80	49	-76	47	-72	46	-68	43	
CE500	12	-64	40	-60	38	-56	35	-52	33	-48	30	-44	26	-40	23	
CE500	13	-36	21	-32	18	-28	16	-24	14	-20	12	-16	10	-12	8	
CE500	14	-8	5	-4	2	0	0	4	-2	8	-4	12	-7	16	-10	
CE500	15	20	-13	24	-15	28	-18	32	-21	36	-23	40	-26	44	-28	
CE500	16	48	-31	52	-34	56	-36	60	-39	64	-42	68	-45	72	-48	
CE500	17	76	-51	80	-54	84	-56	88	-59	92	-62	96	-64	100	-67	
CE500	18	104	-69	108	-72	112	-75	116	-78	120	-80	124	-82	128	-84	
CE500	19	132	-87	136	-89	140	-92	144	-95	148	-98	152	-101	156	-104	
CE500	1A	160	-107	164	-109	168	-112	172	-115	176	-119	180	-121	184	-124	
CE500	1B	188	-126	192	-129	196	-132	200	-135	204	-139	208	-143	212	-145	
CE500	1C	216	-146	220	-147	224	-148	228	-149	232	-150	236	-150	240	-150	
CE500	1D	244	-150	248	-150	252	-150									
CE500	21570311		100	82	-150			-80	49	-76	47	-72	46	-68	42	
CE500	22	-64	41	-60	38	-56	35	-52	32	-48	30	-44	27	-40	23	
CE500	23	-36	21	-32	19	-28	18	-24	15	-20	12	-16	10	-12	7	
CE500	24	-8	4	-4	1	0	0	4	-2	8	-5	12	-9	16	-13	
CE500	25	20	-16	24	-19	28	-22	32	-25	36	-28	40	-31	44	-35	
CE500	26	48	-39	52	-41	56	-45	60	-48	64	-50	68	-51	72	-52	
CE500	27	76	-54	80	-54	84	-53	88	-51	92	-44	96	-45	100	-51	
CE500	28	104	-57	108	-60	112	-64	116	-69	120	-72	124	-76	128	-80	
CE500	29	132	-82	136	-86	140	-90	144	-94	148	-97	152	-100	156	-102	
CE500	2A	160	-107	164	-111	168	-114	172	-117	176	-119	180	-123	184	-128	
CE500	2B	188	-128	192	-132	196	-136	200	-138	204	-140	208	-142	212	-144	
CE500	2C	216	-147	220	148	224	-149	228	-149	232	-149	236	-149	240	-150	
CE500	2D	244	-150													
CE500	31570311		300	81	-150			-80	49	-76	47	-72	46	-68	45	
CE500	32	-64	41	-60	39	-56	36	-52	33	-48	30	-44	26	-40	22	
CE500	33	-36	17	-32	13	-28	9	-24	6	-20	3	-16	0	-12	-1	
CE500	34	-8	-2	-4	-3	0	-8	4	-10	8	-12	12	-13	16	-16	
CE500	35	20	-20	24	-22	28	-23	32	-26	36	-29	40	-31	44	-33	
CE500	36	48	-35	52	-37	56	-38	60	-40	64	-43	68	-47	72	-50	
CE500	37	76	-52	80	-54	84	-58	88	-60	92	-64	96	-71	100	-74	
CE500	38	104	-69	108	-60	112	-49	116	-45	120	-49	124	-54	128	-59	
CE500	39	132	-64	136	-69	140	-74	144	-81	148	-88	152	-93	156	-98	
CE500	3A	160	-102	164	-105	168	-110	172	-116	176	-118	180	-120	184	-124	
CE500	3B	188	-128	192	-132	196	-134	200	-135	204	-137	208	-139	212	-143	
CE500	3C	216	-146	220	-148	224	-149	228	-149	232	-149	236	-149	240	-150	

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Table C2 (Continued)

CE500	41570311		500	83	-150			-80	49	-76	47	-72	46	-68	45
CE500	42	-64	41	-60	39	-56	35	-52	33	-48	30	-44	26	-40	21
CE500	43	-36	17	-32	13	-28	9	-24	5	-20	2	-16	0	-12	-3
CE500	44	-8	-5	-4	-7	0	-9	4	-11	8	-14	12	-16	16	-18
CE500	45	20	-20	24	-22	28	-24	32	-26	36	-28	40	-31	44	-32
CE500	46	48	-32	52	-33	56	-36	60	-40	64	-44	68	-47	72	-50
CE500	47	76	-52	80	-55	84	-59	88	-66	92	-72	96	-76	100	-78
CE500	48	104	-77	108	-72	112	-61	116	-49	120	-45	124	-46	128	-49
CE500	49	132	-53	136	-59	140	-66	144	-75	148	-82	152	-88	156	-94
CE500	4A	160	-99	164	-104	168	-109	172	-114	176	-117	180	-120	184	-124
CE500	4B	188	-126	192	-129	196	-132	200	-136	204	-136	208	-140	212	-141
CE500	4C	216	-143	220	-146	224	-148	228	-149	232	-149	236	-149	240	-150
CE500	4D	244	-150	248	-150										
CE500	51570311		1000	91	-150			-80	49	-76	47	-72	46	-68	45
CE500	52	-64	41	-60	39	-56	35	-52	33	-48	30	-44	26	-40	22
CE500	53	-36	17	-32	11	-28	4	-24	1	-20	-1	-16	-2	-12	-5
CE500	54	-8	-9	-4	-12	0	-14	4	-14	8	-15	12	-18	16	-21
CE500	55	20	-23	24	-26	28	-29	32	-31	36	-30	40	-28	44	-27
CE500	56	48	-26	52	-29	56	-32	60	-36	64	-41	68	-47	72	-54
CE500	57	76	-57	80	-60	84	-62	88	-64	92	-69	96	-74	100	-79
CE500	58	104	-82	108	-82	112	-80	116	-74	120	-63	124	-49	128	-45
CE500	59	132	-45	136	-48	140	-51	144	-57	148	-63	152	-69	156	-77
CE500	5A	160	-88	164	-100	168	-106	172	-110	176	-113	180	-120	184	-121
CE500	5B	188	-125	192	-129	196	-132	200	-136	204	-136	208	-140	212	-142
CE500	5C	216	-144	220	-146	224	-147	228	-148	232	-148	236	-149	240	-150
CE500	5D	244	-150	248	-150	252	-150	256	-150	260	-150	264	-150	268	-150
CE500	5E	272	-150	276	-150	280	-150								
CE500	61570311		1500	82	-150			-80	49	-76	47	-72	46	-68	45
CE500	62	-64	41	60	39	-56	36	-52	34	-48	31	-44	27	-40	22
CE500	63	-36	17	-32	4	-28	1	-24	-1	-20	-3	-16	-6	-12	-9
CE500	64	-8	-11	-4	-12	0	-12	4	-12	8	-14	12	-16	16	-22
CE500	65	20	-29	24	-31	28	-31	32	-33	36	-33	40	-20	44	-19
CE500	66	48	-21	52	-26	56	-32	60	-37	64	-42	68	-47	72	-51
CE500	67	76	-54	80	-59	84	-63	88	-67	92	-69	96	-71	100	-76
CE500	68	104	-79	108	-81	112	-81	116	-80	120	-77	124	-71	128	-53
CE500	69	132	-43	136	-42	140	-46	144	-49	148	-54	152	-60	156	-65
CE500	6A	160	-74	164	-84	168	-94	172	-106	176	-111	180	-116	184	-119
CE500	6B	188	-123	192	-127	196	-131	200	-133	204	-135	208	-139	212	-140
CE500	6C	216	-141	220	-144	224	-146	228	-147	232	-148	236	-148	240	-150
CE500	6D	244	-150												

(Continued)

(Sheet 1 of 4)

Table C2 (Continued)

CE500	71570311	2000	82	-150			-80	49	-76	47	-72	46	-68	45
CE500	72	-64	41	-60	39	-56	36	-52	34	-48	31	-44	26	-40	12
CE500	73	-36	5	-32	2	-28	0	-24	-3	-20	-5	-16	-7	-12	-9
CE500	74	-8	-11	-4	-13	0	-16	4	-18	8	-16	12	-15	16	-20
CE500	75	20	-28	24	-32	28	-33	32	-34	36	-34	40	-32	44	-26
CE500	76	48	-25	52	-27	56	-31	60	-35	64	-40	68	-45	72	-50
CE500	77	76	-54	80	-59	84	-63	88	-66	92	-68	96	-69	100	-70
CE500	78	104	-72	108	-77	112	-80	116	-82	120	-82	124	-82	128	-81
CE500	79	132	-74	136	-58	140	-45	144	-48	148	-50	152	-54	156	-59
CE500	7A	160	-64	164	-69	168	-77	172	-85	176	-94	180	-103	184	-111
CE500	7B	188	-119	192	-127	196	-127	200	-131	204	-133	208	-138	212	-139
CE500	7C	216	-140	220	-141	224	-146	228	-147	232	-147	236	-148	240	-149
CE500	7D	244	-150												
CE500	81570311	3000	82	-150			-80	49	-76	47	-72	46	-68	45
CE500	82	-64	41	-60	39	-56	35	-52	33	-48	30	-44	12	-40	5
CE500	83	-36	1	-32	-1	-28	-3	-24	-5	-20	-7	-16	-9	-12	-12
CE500	84	-8	-14	-4	-15	0	-15	4	-15	8	-16	12	-20	16	-26
CE500	85	20	-30	24	-33	28	-35	32	-39	36	-39	40	-26	44	-20
CE500	86	48	-24	52	-29	56	-33	60	-36	64	-39	68	-43	72	-49
CE500	87	76	-54	80	-59	84	-63	88	-68	92	-69	96	-71	100	-74
CE500	88	104	-75	108	-78	112	-79	116	-81	120	-85	124	-88	128	-89
CE500	89	132	-89	136	-85	140	-77	144	-65	148	-52	152	-47	156	-49
CE500	8A	160	-52	164	-57	168	-62	172	-67	176	-74	180	-81	184	-90
CE500	8B	188	-99	192	-109	196	-120	200	-127	204	-132	208	-137	212	-139
CE500	8C	216	-142	220	-144	224	-147	228	-147	232	-148	236	-148	240	-149
CE500	8D	244	-150												
CE500	91570311	4000	82	-150			-80	49	-76	47	-72	46	-68	45
CE500	92	-64	41	-60	39	-56	35	-52	33	-48	18	-44	5	-40	1
CE500	93	-36	-1	-32	-4	-28	-6	-24	-8	-20	-9	-16	-10	-12	-12
CE500	94	-8	-14	-4	-16	0	-18	4	-20	8	-20	12	-21	16	-22
CE500	95	20	-28	24	-32	28	-35	32	-39	36	-42	40	-36	44	-22
CE500	96	48	-23	52	-28	56	-31	60	-37	64	-41	68	-44	72	-50
CE500	97	76	-57	80	-64	84	-67	88	-69	92	-74	96	-75	100	-77
CE500	98	104	-78	108	-78	112	-78	116	-80	120	-82	124	-82	128	-83
CE500	99	132	-87	136	-90	140	-85	144	-77	148	-63	152	-50	156	-48
CE500	9A	160	-50	164	-55	168	-59	172	-62	176	-67	180	-74	184	-80
CE500	9B	188	-86	192	-94	196	-101	200	-112	204	-122	208	-133	212	-138
CE500	9C	216	-139	220	-141	224	-145	228	-146	232	-147	236	-148	240	-149
CE500	9D	244	-150												

(Continued)

Table C2 (Continued)

CE500	101570311	5000	82	-150			-80	49	-76	47	-72	46	-68	45
CE500	102	-64	41	-60	39	-56	36	-52	33	-48	7	-44	2	-40	-1
CE500	103	-36	-4	-32	-5	-28	-7	-24	-9	-20	-11	-16	-13	-12	-15
CE500	104	-8	-17	-4	-19	0	-21	4	-22	8	-22	12	-21	16	-21
CE500	105	20	-26	24	-30	28	-36	32	-44	36	-43	40	-30	44	-24
CE500	106	48	-26	52	-29	56	-34	60	-38	64	-42	68	-47	72	-53
CE500	107	76	-59	80	-66	84	-68	88	-70	92	-73	96	-75	100	-76
CE500	108	104	-79	108	-80	112	-80	116	-88	120	-88	124	-83	128	-82
CE500	109	132	-82	136	-89	140	-89	144	-86	148	-81	152	-70	156	-60
CE500	10A	160	-50	164	-49	168	-51	172	-54	176	-60	180	-66	184	-71
CE500	10B	188	-76	192	-82	196	-90	200	-99	204	-109	208	-120	212	-132
CE500	10C	216	-139	220	-141	224	-145	228	-148	232	-148	236	-149	240	-149
CE500	10D	244	-150												
CE500	111570311	6000	82	-150			-80	49	-76	47	-72	46	-68	45
CE500	112	-64	41	-60	39	-56	35	-52	9	-48	3	-44	0	-40	-3
CE500	113	-36	-6	-32	-7	-28	-8	-24	-9	-20	-9	-16	-10	-12	-16
CE500	114	-8	-21	-4	-24	0	-24	4	-25	8	-26	12	-25	16	-25
CE500	115	20	-23	24	-21	28	-27	32	-34	36	-42	40	-42	44	-26
CE500	116	48	-23	52	-27	56	-32	60	-37	64	-41	68	-47	72	-56
CE500	117	76	-67	80	-69	84	-71	88	-71	92	-73	96	-77	100	-80
CE500	118	104	-82	108	-83	112	-84	116	-84	120	-88	124	-87	128	-83
CE500	119	132	-86	136	-89	140	-89	144	-93	148	-92	152	-82	156	-81
CE500	11A	160	-76	164	-66	168	-53	172	-48	176	-49	180	-54	184	-59
CE500	11B	188	-64	192	-69	196	-75	200	-84	204	-96	208	-109	212	-120
CE500	11C	216	-130	220	-139	224	-141	228	-147	232	-147	236	-148	240	-149
CE500	11D	244	-150												
CE500	121570311	7000	79	-150			-68	43	-64	38	-60	11	-56	6
CE500	122	-52	3	-48	-1	-44	-4	-40	-6	-36	-8	-32	-9	-28	-10
CE500	123	-24	-10	-20	-9	-16	-14	-12	-20	-8	-23	-4	-25	0	-27
CE500	124	4	-29	8	-30	12	-29	16	-27	20	-30	24	-31	28	-39
CE500	125	32	-44	36	-35	40	-29	44	-25	48	-28	52	-31	56	-37
CE500	126	60	-42	64	-47	68	-53	72	-66	76	-72	80	-77	84	-78
CE500	127	88	-78	92	-79	96	-82	100	-87	104	-90	108	-92	112	-93
CE500	128	116	-93	120	-95	124	-93	128	-93	132	-92	136	-91	140	-89
CE500	129	144	-98	148	-87	152	-89	156	-95	160	-91	164	-86	168	-72
CE500	12A	172	-59	176	-51	180	-52	184	-57	188	-62	192	-67	196	-72
CE500	12B	200	-80	204	-88	208	-96	212	-107	216	-119	220	-128	224	-140
CE500	12C	228	-146	232	-149	236	-149	240	-150	244	-150				

(Continued)

Table C2 (Continued)

CE500	131570311	8000	79	-150			-68	43	-64	38	-60	9	-56	3
CE500	132	-52	0	-48	-2	-44	-4	-40	-6	-36	-9	-32	-11	-28	-10
CE500	133	-24	-11	-20	-13	-16	-17	-12	-20	-8	-23	-4	-24	0	-25
CE500	134	4	-27	8	-28	12	-30	16	-31	20	-32	24	-33	28	-36
CE500	135	32	-39	36	-45	40	-36	44	-26	48	-28	52	-31	56	-36
CE500	136	60	-41	64	-44	68	-48	72	-54	76	-62	80	-77	84	-81
CE500	137	88	-83	92	-83	96	-85	100	-90	104	-93	108	-97	112	-97
CE500	138	116	-97	120	-98	124	-102	128	-98	132	-99	136	-99	140	-94
CE500	139	144	-96	148	-97	152	-99	156	-94	160	-92	164	-87	168	-76
CE500	13A	172	-54	176	-47	180	-49	184	-52	188	-60	192	-65	196	-70
CE500	13B	200	-74	204	-82	208	-90	212	-99	216	-108	220	-117	224	-128
CE500	13C	228	-137	232	-143	236	-147	240	-149	244	-150				
CE500	141570311	9000	82	-150			-76	46	-72	45	-68	22	-64	16
CE500	142	-60	11	-56	5	-52	0	-48	-4	-44	-7	-40	-10	-36	-11
CE500	143	-32	-12	-28	-13	-24	-14	-20	-15	-16	-15	-12	-16	-8	-18
CE500	144	-4	-20	0	-22	4	-26	8	-29	12	-30	16	-29	20	-27
CE500	145	24	-26	28	-28	32	-31	36	-39	40	-42	44	-45	48	-43
CE500	146	52	-39	56	-30	60	-32	64	-37	68	-43	72	-50	76	-54
CE500	147	80	-62	84	-77	88	-85	92	-88	96	-90	100	-92	104	-93
CE500	148	108	-95	112	-97	116	-99	120	-101	124	-102	128	-102	132	-101
CE500	149	136	-98	140	-97	144	-97	148	-97	152	-100	156	-97	160	-89
CE500	14A	164	-92	168	-91	172	-80	176	-65	180	-55	184	-50	188	-50
CE500	14B	192	-55	196	-60	200	-67	204	-72	208	-80	212	-85	216	-95
CE500	14C	220	-103	224	-115	228	-124	232	-138	236	-141	240	-145	244	-147
CE500	14D	248	-150												
CE500	151570311	10000	85	-150			-80	48	-76	26	-72	22	-68	16
CE500	152	-64	11	-60	6	-56	1	-52	-2	-48	-5	-44	-8	-40	-11
CE500	153	-36	-12	-32	-14	-28	-15	-24	-16	-20	-18	-16	-19	-12	-21
CE500	154	-8	-22	-4	-23	0	-23	4	-22	8	-24	12	-27	16	-29
CE500	155	20	-30	24	-30	28	-30	32	-30	36	-28	40	-31	44	-40
CE500	156	48	-44	52	-35	56	-30	60	-32	64	-36	68	-40	72	-44
CE500	157	76	-48	80	-52	84	-68	88	-73	92	-88	96	-94	100	-96
CE500	158	104	-98	108	-100	112	-102	116	-102	120	-100	124	-99	128	-101
CE500	159	132	-101	136	-101	140	-97	144	-102	148	-101	152	-100	156	-91
CE500	15A	160	-95	164	-90	168	-95	172	-90	176	-87	180	-83	184	-68
CE500	15B	188	-54	192	-54	196	-58	200	-61	204	-67	208	-70	212	-75
CE500	15C	216	-80	220	-85	224	-95	228	-108	232	-119	236	-131	240	-141
CE500	15D	244	-144	248	-148	252	-149	256	-150						

(Continued)

Table C2 (Continued)

CASE 510

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CE510   11570513     0 87 -150                      -76   32  -72   22  -68   15  -64   10
CE510   12  -60    5  -56    1  -52   -1  -48   -5  -44   -8  -40  -11  -36  -14
CE510   13  -32  -16  -28  -17  -24  -18  -20  -20  -16  -21  -12  -23   -8  -23
CE510   14   -4  -25    0  -26    4  -26    8  -27   12  -29   16  -30   20  -32
CE510   15   24  -33   28  -32   32  -29   36  -31   40  -39   44  -46   48  -36
CE510   16   52  -36   56  -29   60  -32   64  -35   68  -40   72  -45   76  -49
CE510   17   80  -54   84  -61   88  -73   92  -86   96  -94  100  -95  104  -99
CE510   18  108  -99  112  -99  116 -102  120 -103  124  -99  128 -101  132 -102
CE510   19  136 -105  140 -101  144  -98  148 -102  152  -96  156  -97  160  -96
CE510   1A  164  -93  168  -93  172  -94  176  -84  180  -81  184  -64  188  -58
CE510   1B  192  -56  196  -58  200  -62  204  -67  208  -71  212  -76  216  -81
CE510   1C  220  -88  224  -95  228 -106  232 -117  236 -131  240 -141  244 -145
CE510   1D  248 -146  252 -148  256 -150  260 -150  264 -150  268 -150

CE510   21570513   100 86 -150                     -80   46  -76   30  -72   24  -68   18
CE510   22  -64   12  -60    1  -56    2  -52   -6  -48   -7  -44  -10  -40  -13
CE510   23  -36  -14  -32  -16  -28  -16  -24  -17  -20  -20  -16  -21  -12  -21
CE510   24   -8  -21   -4  -25    0  -24    4  -25    8  -27   12  -27   16  -29
CE510   25   20  -31   24  -32   28  -31   32  -30   36  -31   40  -38   44  -45
CE510   26   48  -41   52  -34   56  -31   60  -31   64  -34   68  -39   72  -43
CE510   27   76  -48   80  -52   84  -61   88  -71   92  -84   96  -94  100  -93
CE510   28  104 -100  108  -99  112  -99  116 -101  120 -100  124 -101  128 -102
CE510   29  132 -100  136 -104  140 -100  144  -98  148 -101  152  -97  156  -96
CE510   2A  160  -97  164  -94  168  -93  172  -93  176  -83  180  -80  184  -64
CE510   2B  188  -58  192  -57  196  -57  200  -63  204  -68  208  -71  212  -75
CE510   2C  216  -81  220  -87  224  -95  228 -104  232 -111  236 -130  240 -141
CE510   2D  244 -144  248 -146  252 -149  256 -148  260 -150

CE510   31570513   300 86 -150                     -80   47  -76   31  -72   26  -68   20
CE510   32  -64   15  -60    9  -56    2  -52   -5  -48  -10  -44  -11  -40  -10
CE510   33  -36  -10  -32  -11  -28  -13  -24  -14  -20  -16  -16  -19  -12  -22
CE510   34   -8  -24   -4  -35    0  -35    4  -27    8  -24   12  -26   16  -27
CE510   35   20  -29   24  -30   28  -31   32  -30   36  -40   40  -43   44  -45
CE510   36   48  -38   52  -33   56  -33   60  -35   64  -38   68  -42   72  -42
CE510   37   76  -45   80  -52   84  -60   88  -69   92  -81   96  -92  100  -95
CE510   38  104  -99  108  -98  112 -100  116 -101  120 -101  124 -101  128 -101
CE510   39  132 -100  136 -102  140 -100  144 -100  148 -101  152  -98  156  -97
CE510   3A  160  -95  164  -92  168  -95  172  -92  176  -82  180  -72  184  -60
CE510   3B  188  -59  192  -58  196  -62  200  -64  204  -69  208  -70  212  -77
CE510   3C  216  -80  220  -88  224  -95  228 -105  232 -119  236 -132  240 -141
CE510   3D  244 -145  248 -147  252 -149  256 -150  260 -150
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(Continued)

Table C2 (Continued)

CE510	41570513	500	86	-150			-76	32	-72	27	-68	21	-64	16
CE510	42	-60	12	-56	6	-52	1	-48	-4	-44	-9	-40	-13	-36	-14
CE510	43	-32	-16	-28	-17	-24	-17	-20	-19	-16	-21	-12	-22	-8	-26
CE510	44	-4	-36	0	-36	4	-29	8	-26	12	-25	16	-26	20	-30
CE510	45	24	-30	28	-29	32	-41	36	-37	40	-47	44	-35	48	-33
CE510	46	52	-34	56	-35	60	-42	64	-40	68	-48	72	-46	76	-49
CE510	47	80	-57	84	-66	88	-76	92	-88	96	-96	100	-98	104	-99
CE510	48	108	-100	112	-100	116	-101	120	-101	124	-101	128	-101	132	-101
CE510	49	136	-103	140	-101	144	-100	148	-99	152	-98	156	-94	160	-92
CE510	4A	164	-94	168	-93	172	-93	176	-86	180	-69	184	-69	188	-63
CE510	4B	192	-58	196	-61	200	-69	204	-69	208	-70	212	-76	216	-81
CE510	4C	220	-88	224	-95	228	-105	232	-118	236	-133	240	-141	244	-145
CE510	4D	248	-147	252	-148	256	-149	260	-150	264	-150				
CE510	51570513	1000	85	-177			-76	31	-72	28	-68	22	-64	18
CE510	52	-60	15	-56	11	-52	6	-48	2	-44	-3	-40	-7	-36	-9
CE510	53	-32	-14	-28	-17	-24	-19	-20	-21	-16	-23	-12	-24	-8	-26
CE510	54	-4	-29	0	-39	4	-29	8	-30	12	-32	16	-35	20	-25
CE510	55	24	-33	28	-33	32	-27	36	-30	40	-33	44	-32	48	-40
CE510	56	52	-40	56	-44	60	-39	64	-45	68	-43	72	-53	76	-55
CE510	57	80	-60	84	-65	88	-75	92	-88	96	-94	100	-96	104	-100
CE510	58	108	-100	112	-101	116	-102	120	-101	124	-101	128	-101	132	-102
CE510	59	136	-104	140	-100	144	-101	148	-100	152	-99	156	-96	160	-96
CE510	5A	164	-95	168	-94	172	-90	176	-75	180	-75	184	-65	188	-60
CE510	5B	192	-62	196	-64	200	-67	204	-67	208	-72	212	-77	216	-82
CE510	5C	220	-87	224	-95	228	-106	232	-120	236	-133	240	-141	244	-146
CE510	5D	248	-147	252	-149	256	-149	260	-150						
CE510	61570513	1500	86	-150			-80	48	-76	31	-72	27	-68	22
CE510	62	-64	19	-60	16	-56	12	-52	1	-48	0	-44	0	-40	-7
CE510	63	-36	-10	-32	-11	-28	-13	-24	-16	-20	-20	-16	-25	-12	-25
CE510	64	-8	-26	-4	-26	0	-30	4	-38	8	-35	12	-28	16	-23
CE510	65	20	-22	24	-23	28	-23	32	-30	36	-31	40	-38	44	-38
CE510	66	48	-44	52	-40	56	-42	60	-41	64	-47	68	-46	72	-55
CE510	67	76	-63	80	-62	84	-70	88	-70	92	-85	96	-94	100	-96
CE510	68	104	-99	108	-100	112	-101	116	-102	120	-101	124	-101	128	-103
CE510	69	132	-101	136	-102	140	-100	144	-101	148	-101	152	-98	156	-96
CE510	6A	160	-95	164	-95	168	-94	172	-85	176	-76	180	-70	184	-70
CE510	6B	188	-63	192	-67	196	-66	200	-67	204	-69	208	-71	212	-75
CE510	6C	216	-82	220	-89	224	-95	228	-106	232	-118	236	-135	240	-143
CE510	6D	244	-145	248	-147	252	-149	256	-149	260	-150				

(Continued)

(Sheet 20 of 21)

Table C2 (Continued)

CE510	71570513 2000 86 -150						-76	32	-72	28	-68	22	-64	19
CE510	72	-60	16	-56	13	-52	9	-48	4	-44	-1	-40	-5	-36	-7
CE510	73	-32	-11	-28	-13	-24	-17	-20	-20	-16	-21	-12	-22	-8	-23
CE510	74	-4	-23	0	-37	4	-32	8	-31	12	-27	16	-23	20	-23
CE510	75	24	-23	28	-27	32	-30	36	-45	40	-38	44	-41	48	-39
CE510	76	52	-38	56	-48	60	-51	64	-46	68	-53	72	-60	76	-67
CE510	77	80	-70	84	-71	88	-73	92	-81	96	-92	100	-95	104	-99
CE510	78	108	-100	112	-100	116	-102	120	-101	124	-100	128	-103	132	-101
CE510	79	136	-102	140	-100	144	-100	148	-100	152	-98	156	-97	160	-96
CE510	7A	164	-97	168	-90	172	-79	176	-74	180	-73	184	-70	188	-67
CE510	7B	192	-69	196	-68	200	-70	204	-70	208	-71	212	-75	216	-80
CE510	7C	220	-87	224	-95	228	-103	232	-119	236	-132	240	-143	244	-145
CE510	7D	248	-147	252	-148	256	-149	260	-150	264	-150				
CE510	81570513 3000 86 -150						-80	46	76	32	-72	27	-68	24
CE510	82	-64	23	-60	22	-56	20	-52	16	-48	11	-44	6	-40	1
CE510	83	-36	-3	-32	-7	-28	-10	-24	-14	-20	-16	-16	-18	-12	-20
CE510	84	-8	-21	-4	-22	0	-26	4	-32	8	-27	12	-27	16	-29
CE510	85	20	-32	24	-30	28	-32	32	-31	36	-47	40	-42	44	-43
CE510	86	48	-42	52	-53	56	-48	60	-58	64	-53	68	-61	72	-65
CE510	87	76	-64	80	-70	84	-79	88	-81	92	-83	96	-96	100	-100
CE510	88	104	-100	108	-101	112	-102	116	-103	120	-102	124	-102	128	-102
CE510	89	132	-101	136	-102	140	-101	144	-100	148	-100	152	-98	156	-97
CE510	8A	160	-98	164	-99	168	-85	172	-74	176	-77	180	-72	184	-73
CE510	8B	188	-71	192	-69	196	-69	200	-74	204	-76	208	-78	212	-79
CE510	8C	216	-81	220	-86	224	-95	228	-104	232	-120	236	-132	240	-144
CE510	8D	244	-147	248	-148	252	-149	256	-149	260	-150				
CE510	91570513 4000 86 -150						-80	48	-76	32	-72	28	-68	21
CE510	92	-64	26	-60	27	-56	24	-52	21	-48	17	-44	10	-40	6
CE510	93	-36	4	-32	-1	-28	-4	-24	-6	-20	-9	-16	-12	-12	-16
CE510	94	-8	-18	-4	-20	0	-23	4	-25	8	-28	12	-32	16	-35
CE510	95	20	-31	24	-32	28	-34	32	-37	36	-40	40	-42	44	-44
CE510	96	48	-48	52	-49	56	-60	60	-57	64	-66	68	-62	72	-75
CE510	97	76	-70	80	-74	84	-85	88	-87	92	-92	96	-96	100	-101
CE510	98	104	-101	108	-102	112	-105	116	-106	120	-104	124	-103	128	-104
CE510	99	132	-103	136	-102	140	-103	144	-100	148	-99	152	-98	156	-98
CE510	9A	160	-100	164	-89	168	-79	172	-77	176	-71	180	-74	184	-68
CE510	9B	188	-68	192	-71	196	-72	200	-72	204	-77	208	-78	212	-82
CE510	9C	216	-88	220	-91	224	-98	228	-99	232	-113	236	-132	240	-144
CE510	9D	244	-147	248	-149	252	-149	256	-149	260	-150				

(Continued)

Table C2 (Continued)

CE510	101570513	5000	85	-150			-80	47	-76	32	-72	32	-68	33
CE510	102	-64	33	-60	30	-56	26	-52	20	-48	19	-44	14	-40	8
CE510	103	-36	6	-32	1	-28	-1	-24	-3	-20	-7	-16	-10	-12	-13
CE510	104	-8	-17	-4	-20	0	-23	4	-25	8	-27	12	-30	16	-32
CE510	105	20	-31	24	-32	28	-34	32	-36	36	-39	40	-42	44	-52
CE510	106	48	-52	52	-50	56	-55	60	-68	64	-73	68	-81	72	-80
CE510	107	76	-82	80	-88	84	-87	88	-83	92	-98	96	-95	100	-100
CE510	108	104	-100	108	-100	112	-98	116	-105	120	-102	124	-99	128	-101
CE510	109	132	-106	136	-110	140	-103	144	-109	148	-103	152	-100	156	-97
CE510	10A	160	-88	164	-89	168	-86	172	-77	176	-73	180	-74	184	-76
CE510	10B	188	-70	192	-82	196	-79	200	-76	204	-80	208	-79	212	-84
CE510	10C	216	-91	220	-92	224	-98	228	-95	232	-111	236	-119	240	-139
CE510	10D	244	-147	248	-149	252	-149	256	-150						
CE510	111570513	6000	87	-150			-80	48	-76	33	-72	34	-68	36
CE510	112	-64	38	-60	37	-56	31	-52	24	-48	19	-44	17	-40	11
CE510	113	-36	8	-32	4	-28	-1	-24	-6	-20	-8	-16	-11	-12	-14
CE510	114	-8	-16	-4	-18	0	-21	4	-24	8	-27	12	-31	16	-33
CE510	115	20	-32	24	-32	28	-34	32	-37	36	-39	40	-41	44	-45
CE510	116	48	-59	52	-67	56	-68	60	-66	64	-68	68	-70	72	-81
CE510	117	76	-85	80	-93	84	-86	88	-89	92	-95	96	-89	100	-85
CE510	118	104	-93	108	-92	112	-94	116	-96	120	-95	124	-105	128	-99
CE510	119	132	-104	136	-109	140	-103	144	-107	148	-107	152	-103	156	-102
CE510	11A	160	-101	164	-90	168	-85	172	-81	176	-79	180	-74	184	-76
CE510	11B	188	-74	192	-75	196	-79	200	-80	204	-81	208	-91	212	-96
CE510	11C	216	-95	220	-98	224	-105	228	-103	232	-108	236	-112	240	-121
CE510	11D	244	-132	248	-149	252	-150	256	-148	260	-150	264	-150		
CE510	121570513	7000	88	-150			-80	48	-76	33	-72	34	-68	39
CE510	122	-64	41	-60	40	-56	35	-52	30	-48	25	-44	19	-40	14
CE510	123	-36	9	-32	4	-28	0	-24	-4	-20	-7	-16	-10	-12	-14
CE510	124	-8	-16	-4	-18	0	-21	4	-24	8	-28	12	-35	16	-35
CE510	125	20	-32	24	-32	28	-35	32	-38	36	-40	40	-42	44	-48
CE510	126	48	-45	52	-52	56	-61	60	-68	64	-84	68	-74	72	-73
CE510	127	76	-75	80	-76	84	-83	88	-95	92	-86	96	-86	100	-89
CE510	128	104	-91	108	-86	112	-97	116	-90	120	-95	124	-96	128	-100
CE510	129	132	-108	136	-103	140	-110	144	-112	148	-116	152	-114	156	-110
CE510	12A	160	-99	164	-96	168	-88	172	-71	176	-71	180	-78	184	-74
CE510	12B	188	-76	192	-78	196	-83	200	-88	204	-90	208	-91	212	-92
CE510	12C	216	-95	220	-110	224	-109	228	-119	232	-109	236	-120	240	-118
CE510	12D	244	-129	248	-130	252	-131	256	-145	260	-149	264	-149	268	-150

(Continued)

Table C2 (Continued)

CE510	131570513	8000	89	-150				-80	47	-76	35	-72	36	-68	38
CE510	132	-64	41	-60	43	-56	40	-52	33	-48	26	-44	19	-40	15
CE510	133	-36	11	-32	5	-28	0	-24	-3	-20	-7	-16	-10	-12	-13
CE510	134	-8	-16	-4	-18	0	-22	4	-26	8	-28	12	-32	16	-37
CE510	135	20	-35	24	-33	28	-34	32	-37	36	-40	40	-41	44	-43
CE510	136	48	-51	52	-63	56	-55	60	-59	64	-64	68	-66	72	-67
CE510	137	76	-72	80	-86	84	-79	88	-84	92	-82	96	-88	100	-82
CE510	138	104	-92	108	-87	112	-93	116	-91	120	-94	124	-98	128	-107
CE510	139	132	-100	136	-107	140	-112	144	-114	148	-113	152	-121	156	-119
CE510	13A	160	-113	164	-111	168	-88	172	-87	176	-82	180	-82	184	-80
CE510	13B	188	-73	192	-84	196	-82	200	-90	204	-89	208	-86	212	-95
CE510	13C	216	-110	220	-112	224	-115	228	-114	232	-123	236	-123	240	-121
CE510	13D	244	-128	248	-129	252	-132	256	-136	260	-139	264	-149	268	-149
CE510	13E	272	-150												
CE510	141570513	9000	90	-150				-80	47	-76	36	-72	37	-68	40
CE510	142	-64	41	-60	41	-56	37	-52	31	-48	26	-44	19	-40	16
CE510	143	-36	13	-32	6	-28	1	-24	-1	-20	-6	-16	-9	-12	-12
CE510	144	-8	-14	-4	-18	0	-22	4	-24	8	-26	12	-29	16	-36
CE510	145	20	-37	24	-34	28	-33	32	-35	36	-37	40	-40	44	-42
CE510	146	48	-47	52	-46	56	-52	60	-58	64	-68	68	-66	72	-77
CE510	147	76	-67	80	-77	84	-80	88	-77	92	-85	96	-92	100	-85
CE510	148	104	-87	108	-87	112	-89	116	-92	120	-103	124	-103	128	-103
CE510	149	132	-105	136	-112	140	-120	144	-125	148	-125	152	-123	156	-120
CE510	14A	160	-112	164	-99	168	-95	172	-80	176	-80	180	-76	184	-78
CE510	14B	188	-78	192	-85	196	-88	200	-85	204	-95	208	-100	212	-104
CE510	14C	216	-110	220	-112	224	-110	228	-120	232	-122	236	-125	240	-128
CE510	14D	244	-133	248	-135	252	-132	256	-132	260	-138	264	-139	268	-142
CE510	14E	272	-148	276	-150										
CE510	151570513	10000	92	-150				-80	47	-76	36	-72	39	-68	41
CE510	152	-64	42	-60	43	-56	40	-52	33	-48	38	-44	20	-40	17
CE510	153	-36	12	-32	8	-28	1	-24	-3	-20	-5	-16	-10	-12	-13
CE510	154	-8	-16	-4	-18	0	-20	4	-23	8	-25	12	-28	16	-31
CE510	155	20	-36	24	-35	28	-33	32	-33	36	-36	40	-38	44	-41
CE510	156	48	-47	52	-48	56	-48	60	-53	64	-58	68	-61	72	-70
CE510	157	76	-88	80	-74	84	-71	88	-75	92	-89	96	-90	100	-88
CE510	158	104	-91	108	-99	112	-101	116	-90	120	-98	124	-108	128	-111
CE510	159	132	-106	136	-116	140	-120	144	-125	148	-129	152	-127	156	-121
CE510	15A	160	-110	164	-103	168	-98	172	-92	176	-85	180	-80	184	-80
CE510	15B	188	-77	192	-80	196	-82	200	-94	204	-99	208	-103	212	-102
CE510	15C	216	-100	220	-108	224	-116	228	-123	232	-130	236	-129	240	-132
CE510	15D	244	-128	248	-136	252	-135	256	-133	260	-130	264	-140	268	-142
CE510	15E	272	-146	276	-147	280	-149	284	-150						

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Table C2 (Continued)

CE510	16157051311000 92 -150						-80	47	-76	37	-72	38	-68	40
CE510	162	-64	43	-60	44	-56	41	-52	35	-48	27	-44	25	-40	16
CE510	163	-36	14	-32	1	-28	0	-24	0	-20	0	-16	-1	-12	-11
CE510	164	-8	-14	-4	-16	0	-18	4	-22	8	-25	12	-27	16	-32
CE510	165	20	-35	24	-32	28	-31	32	-34	36	-36	40	-38	44	-40
CE510	166	48	-45	52	-53	56	-54	60	-57	64	-60	68	-58	72	-61
CE510	167	76	-75	80	-77	84	-76	88	-80	92	-95	96	-86	100	-85
CE510	168	104	-83	108	-92	112	-105	116	-99	120	-107	124	-100	128	-108
CE510	169	132	-115	136	-120	140	-123	144	-123	148	-123	152	-123	156	-120
CE510	16A	160	-116	164	-106	168	-98	172	-90	176	-86	180	-82	184	-78
CE510	16B	188	-76	192	-87	196	-89	200	-94	204	-100	208	-99	212	-98
CE510	16C	216	-111	220	-112	224	-118	228	-119	232	-121	236	-125	240	-130
CE510	16D	244	-129	248	-134	252	-139	256	-137	260	-132	264	-135	268	-138
CE510	16E	272	-146	276	-148	280	-148	284	-150						
CE510	17157051312000 93 -150						-80	47	-76	36	-72	39	-68	40
CE510	172	-64	42	-60	44	-56	42	-52	36	-48	30	-44	22	-40	18
CE510	173	-36	13	-32	10	-28	[illegible]	-24	1	-20	-3	-16	[illegible]	-12	-9
CE510	174	-8	-11	-4	-14	0	-17	4	-21	8	-24	12	-25	16	-28
CE510	175	20	-31	24	-32	28	-31	32	-32	36	-34	40	-36	44	-38
CE510	176	48	-42	52	-40	56	-56	60	-60	64	-60	68	-62	72	-70
CE510	177	76	-85	80	-78	84	-74	88	-76	92	-79	96	-84	100	-100
CE510	178	104	-93	108	-98	112	-99	116	-99	120	-107	124	-112	128	-110
CE510	179	132	-111	136	-117	140	-122	144	-123	148	-124	152	-121	156	-118
CE510	17A	160	-111	164	-106	168	-101	172	-91	176	-87	180	-80	184	-80
CE510	17B	188	-82	192	-85	196	-89	200	-95	204	-99	208	-101	212	-105
CE510	17C	216	-113	220	-117	224	-120	228	-122	232	-124	236	-128	240	-130
CE510	17D	244	-133	248	-136	252	-129	256	-137	260	-134	264	-133	268	-138
CE510	17E	272	-140	276	-143	280	-149	284	-146	288	-150				

CASE 600

CE600	11570604 0 76 -150						-72	47	-68	45	-64	42	-60	39
CE600	12	-56	37	-52	34	-48	31	-44	29	-40	26	-36	23	-32	21
CE600	13	-28	18	-24	15	-20	13	-16	10	-12	8	-8	5	-4	2
CE600	14	0	0	4	-1	8	-4	12	-6	16	-9	20	-12	24	-14
CE600	15	28	-17	32	-20	36	-22	40	-25	44	-28	48	-30	52	-33
CE600	16	56	-36	60	-38	64	-41	68	-44	72	-46	76	-49	80	-52
CE600	17	84	-54	88	-57	92	-60	96	-62	100	-65	104	-68	108	-70
CE600	18	112	-73	116	-76	120	-78	124	-81	128	-84	132	-86	136	-89
CE600	19	140	-92	144	-94	148	-97	152	-100	156	-102	160	-105	164	-108
CE600	1A	168	-110	172	-113	176	-116	180	-118	184	-121	188	-124	192	-126
CE600	1B	196	-129	200	-132	204	-134	208	-137	212	-140	216	-142	220	-145
CE600	1C	224	-148	228	-150										

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Table C2 (Continued)

CE600	21570604	100	76	-150			-72	47	-68	45	-64	42	-60	39
CE600	22	-56	37	-52	34	-48	31	-44	30	-40	27	-36	22	-32	20
CE600	23	-28	21	-24	21	-20	20	-16	18	-12	15	-8	11	-4	6
CE600	24	0	1	4	-2	8	-4	12	-8	16	-13	20	-16	24	-19
CE600	25	28	-22	32	-25	36	-27	40	-29	44	-31	48	-33	52	-35
CE600	26	56	-36	60	-37	64	-39	68	-41	72	-43	76	-46	80	-50
CE600	27	84	-52	88	-55	92	-58	96	-62	100	-66	104	-68	108	-72
CE600	28	112	-77	116	-80	120	-82	124	-85	128	-89	132	-91	136	-92
CE600	29	140	-95	144	-98	148	-100	152	-102	156	-106	160	-108	164	-110
CE600	2A	168	-114	172	-115	176	-118	180	-119	184	-120	188	-123	192	-125
CE600	2B	196	-128	200	-131	204	-133	208	-136	212	-139	216	-143	220	-146
CE600	2C	224	-148	228	-150										
CE600	31570604	300	76	-150			-72	47	-68	45	-64	42	-60	39
CE600	32	-56	37	-52	34	-48	31	-44	30	-40	27	-36	22	-32	22
CE600	33	-28	23	-24	26	-20	25	-16	21	-12	17	-8	13	-4	8
CE600	34	0	3	4	-3	8	-7	12	-12	16	-15	20	-17	24	-20
CE600	35	28	-23	32	-26	36	-28	40	-30	44	-32	48	-34	52	-34
CE600	36	56	-35	60	-36	64	-37	68	-40	72	-46	76	-51	80	-51
CE600	37	84	-52	88	-57	92	-61	96	-64	100	-68	104	-68	108	-70
CE600	38	112	-72	116	-76	120	-81	124	-84	128	-84	132	-84	136	-87
CE600	39	140	-91	144	-95	148	-100	152	-104	156	-106	160	-109	164	-113
CE600	3A	168	-113	172	-116	176	-120	180	-123	184	-125	188	-126	192	-127
CE600	3B	196	-128	200	-131	204	-133	208	-136	212	-139	216	-143	220	-146
CE600	3C	224	-147	228	-150										
CE600	41570604	500	76	-150			-72	47	-68	45	-64	42	-60	39
CE600	42	-56	37	-52	34	-48	31	-44	30	-40	27	-36	22	-32	23
CE600	43	-28	23	-24	26	-20	25	-16	21	-12	17	-8	13	-4	9
CE600	44	0	4	4	-2	8	-7	12	-10	16	-14	20	-17	24	-20
CE600	45	28	-22	32	-25	36	-28	40	-30	44	-32	48	-35	52	-35
CE600	46	56	-36	60	-37	64	-38	68	-42	72	-51	76	-52	80	50
CE600	47	84	-52	88	-58	92	-65	96	-68	100	-69	104	-68	108	-72
CE600	48	112	-72	116	-74	120	-76	124	-82	128	-83	132	-86	136	-88
CE600	49	140	-89	144	-95	148	-101	152	-105	156	-110	160	-113	164	-115
CE600	4A	168	-117	172	-116	176	-118	180	-122	184	-124	188	-126	192	-128
CE600	4B	196	-131	200	-133	204	-134	208	-136	212	-140	216	-143	220	-146
CE600	4C	224	-147	228	-150										
CE600	51570604	1000	76	-150			-72	47	-68	45	-64	42	-60	39
CE600	52	-56	37	-52	34	-48	31	-44	30	-40	27	-36	22	-32	22
CE600	53	-28	23	-24	26	-20	27	-16	25	-12	21	-8	17	-4	11
CE600	54	0	5	4	-1	8	-6	12	-11	16	-16	20	-20	24	-23
CE600	55	28	-25	32	-27	36	-29	40	-31	44	-32	48	-33	52	-34
CE600	56	56	-35	60	-36	64	-37	68	-40	72	-50	76	-54	80	-52
CE600	57	84	-57	88	-64	92	-69	96	-66	100	-60	104	-66	108	-72
CE600	58	112	-76	116	-81	120	-77	124	-74	128	-81	132	-90	136	-88
CE600	59	140	-85	144	-94	148	-103	152	-108	156	-111	160	-112	164	-114
CE600	5A	168	-114	172	-118	176	-122	180	-122	184	-125	188	-126	192	-128
CE600	5B	196	-131	200	-133	204	-134	208	-136	212	-140	216	-143	220	-146
CE600	5C	224	-147	228	-150										

(Continued)

Table C2 (Continued)

CE600	61570604 1500 76 -150							-72	47	-68	45	-64	42	-60	39
CE600	62	-56	37	-52	34	-48	31	-44	30	-40	25	-36	21	-32	24
CE600	63	-28	24	-24	26	-20	28	-16	26	-12	22	-8	17	-4	12
CE600	64	0	6	4	0	8	-5	12	-9	16	-14	20	-17	24	-20
CE600	65	28	-24	32	-27	36	-29	40	-30	44	-31	48	-32	52	-33
CE600	66	56	-34	60	-35	64	-38	68	-44	72	-53	76	-56	80	-54
CE600	67	84	-61	88	-58	92	-52	96	-61	100	-71	104	-71	108	-77
CE600	68	112	-80	116	-81	120	-76	124	-80	128	-84	132	-89	136	-94
CE600	69	140	-92	144	-84	148	-95	152	-104	156	-110	160	-110	164	-115
CE600	6A	168	-114	172	-121	176	-119	180	-119	184	-121	188	-123	192	-125
CE600	6B	196	-128	200	-131	204	-134	208	-137	212	-139	216	-143	220	-146
CE600	6C	224	-148	228	-150										
CE600	71570604 2000 76 -150							-72	47	-68	45	-64	42	-60	39
CE600	72	-56	37	-52	34	-48	31	-44	30	-40	25	-36	21	-32	24
CE600	73	-28	24	-24	26	-20	28	-16	27	-12	24	-8	19	-4	14
CE600	74	0	8	4	1	8	-3	12	-7	16	-13	20	-17	24	-20
CE600	75	28	-23	32	-26	36	-29	40	-30	44	-31	48	-32	52	-33
CE600	76	56	-35	60	-37	64	-46	68	-54	72	-57	76	-56	80	-56
CE600	77	84	-53	88	-49	92	-58	96	-73	100	-69	104	-73	108	-73
CE600	78	112	-78	116	-73	120	-83	124	-87	128	-89	132	-87	136	-92
CE600	79	140	-94	144	-90	148	-87	152	-98	156	-104	160	-113	164	-114
CE600	7A	168	-118	172	-119	176	-124	180	-125	184	-125	188	-128	192	-129
CE600	7B	196	-131	200	-133	204	-134	208	-137	212	-140	216	-143	220	-146
CE600	7C	224	-148	228	-150										
CE600	81570604 3000 75 -150							-72	47	-68	45	-64	42	-60	39
CE600	82	-56	37	-52	34	-48	31	-44	30	-40	25	-36	21	-32	23
CE600	83	-28	24	-24	26	-20	28	-16	28	-12	26	-8	20	-4	14
CE600	84	0	8	4	1	8	-4	12	-8	16	-14	20	-20	24	-23
CE600	85	28	-25	32	-27	36	-30	40	-31	44	-31	48	-32	52	-33
CE600	86	56	-34	60	-34	64	-36	68	-44	72	-56	76	-60	80	-54
CE600	87	84	-55	88	-60	92	-66	96	-70	100	-67	104	-67	108	-74
CE600	88	112	-79	116	-83	120	-83	124	-84	128	-85	132	-88	136	-89
CE600	89	140	-92	144	-94	148	-98	152	-102	156	-97	160	-96	164	-107
CE600	8A	168	-119	172	-123	176	-124	180	-125	184	-124	188	-125	192	-128
CE600	8B	196	-131	200	-135	204	-138	208	-140	212	-143	216	-146	220	-150
CE600	8C	224	-150												
CE600	91570604 4000 76 -150							-72	47	-68	45	-64	42	-60	39
CE600	92	-56	37	-52	34	-48	31	-44	30	-40	25	-36	21	-32	24
CE600	93	-28	24	-24	26	-20	28	-16	28	-12	25	-8	21	-4	14
CE600	94	0	7	4	0	8	-4	12	-9	16	-13	20	-18	24	-21
CE600	95	28	-23	32	-26	36	-29	40	-31	44	-31	48	-31	52	-32
CE600	96	56	-33	60	-35	64	-38	68	-43	72	-57	76	-61	80	-58
CE600	97	84	-61	88	-64	92	-68	96	-72	100	-72	104	-67	108	-70
CE600	98	112	-77	116	-75	120	-83	124	-79	128	-83	132	-84	136	-85
CE600	99	140	-91	144	-89	148	-93	152	-103	156	-110	160	-107	164	-113
CE600	9A	168	-104	172	-118	176	-122	180	-123	184	-124	188	-125	192	-127
CE600	9B	196	-132	200	-134	204	-136	208	-139	212	-141	216	-143	220	-145
CE600	9C	224	-148	228	-150										

(Continued)

Table C2 (Continued)

CE600	101570604	6000	77	-150			-72	47	-68	45	-64	42	-60	39
CE600	102	-56	37	-52	34	-48	31	-44	30	-40	25	-36	21	-32	24
CE600	103	-28	24	-24	26	-20	28	-16	29	-12	28	-8	21	-4	14
CE600	104	0	8	4	-7	8	-3	12	-8	16	-13	20	-18	24	-18
CE600	105	28	-24	32	-27	36	-29	40	-30	44	-30	48	-30	52	-31
CE600	106	56	-32	60	-34	64	-38	68	-44	72	-56	76	-62	80	-60
CE600	107	84	-58	88	-62	92	-69	96	-72	100	-73	104	-73	108	-67
CE600	108	112	-69	116	-79	120	-85	124	-88	128	-85	132	-87	136	-90
CE600	109	140	-91	144	-95	148	-89	152	-96	156	-107	160	-107	164	-111
CE600	10A	168	-116	172	-117	176	-119	180	-116	184	-125	188	-127	192	-127
CE600	10B	196	-131	200	-136	204	-140	208	-140	212	-139	216	-143	220	-146
CE600	10C	224	-147	228	-149	232	-150								

CASE 610

CE610	11570614	0	76	-150			-72	47	-68	45	-64	42	-60	39
CE610	12	-56	37	-52	34	-48	31	44	30	-40	25	-36	21	-32	24
CE610	13	-28	24	-24	26	-20	28	-16	29	-12	28	-8	21	-4	14
CE610	14	0	8	4	-7	8	-3	12	-8	16	-13	20	-18	24	-18
CE610	15	28	-24	32	-27	36	-29	40	-30	44	-30	48	-30	52	-31
CE610	16	56	-32	60	-34	64	-38	68	-44	72	-56	76	-62	80	-60
CE610	17	84	-58	88	-62	92	-69	96	-72	100	-73	104	-73	108	-67
CE610	18	112	-69	116	-79	120	-85	124	-88	128	-85	132	-87	136	-90
CE610	19	140	-91	144	-95	148	-89	152	-96	156	-107	160	-107	164	-111
CE610	1A	168	-116	172	-117	176	-119	180	-116	184	-125	188	-127	192	-127
CE610	1B	196	-131	200	-136	204	-140	208	-140	212	-139	216	-143	220	-146
CE610	1C	224	-147	228	-150										
CE610	21570614	75	79	-149			-76	50	-72	49	-68	48	64	47
CE610	22	-60	45	-56	43	-52	41	-48	39	-44	37	-40	33	-36	28
CE610	23	-32	25	-28	22	-24	18	-20	16	-16	13	-12	4	-8	4
CE610	24	-4	1	0	-3	4	-7	8	-10	12	-12	16	-15	20	-18
CE610	25	24	-22	28	-23	32	-25	36	-27	40	-29	44	-31	48	-32
CE610	26	52	-35	56	-38	60	-43	64	-47	68	-50	72	-49	76	-50
CE610	27	80	-57	84	-70	88	-81	92	-86	96	-81	100	-68	104	-60
CE610	28	108	-57	112	-58	116	-60	120	-64	124	-67	128	-70	132	-73
CE610	29	136	-77	140	-80	144	-85	148	-90	152	-95	156	-99	160	-106
CE610	2A	164	-108	168	-111	172	-114	176	-116	180	-119	184	-121	188	-122
CE610	2B	192	-128	196	-132	200	-135	204	-137	208	-138	212	-142	216	-145
CE610	2C	220	-146	224	-147	228	-149	232	-149	236	-150				

(Continued)

(Sheet 27 of 31)

Table C2 (Continued)

CASE 700

CE700	11570620	0	81	-135			-104	65	-100	65	-96	62	-92	59
CE700	12	-88	57	-84	55	-80	53	-76	50	-72	48	-68	45	-64	42
CE700	13	-60	40	-56	37	-52	34	-48	31	-44	29	-40	27	-36	25
CE700	14	-32	22	-28	19	-24	16	-20	14	-16	12	-12	9	-8	6
CE700	15	-4	3	0	0	4	-2	8	-4	12	-4	16	-8	20	-11
CE700	16	24	-14	28	-17	32	-20	36	-23	40	-25	44	-28	48	-31
CE700	17	52	-34	56	-37	60	-40	64	-43	68	-46	72	-48	76	-51
CE700	18	80	-53	84	-55	88	-58	92	-61	96	-63	100	-66	104	-69
CE700	19	108	-72	112	-75	116	-78	120	-81	124	-84	128	-87	132	-90
CE700	1A	136	-93	140	-96	144	-99	148	-102	152	-104	156	-108	160	-111
CE700	1B	164	-114	168	-118	172	-121	176	-125	180	-129	184	-132	188	-133
CE700	1C	192	-134	196	-135	200	-135	204	-135	208	-135	212	-135	216	-135
CE700	21570620	100	68	-135			-68	46	-64	43	-60	40	-56	38
CE700	22	-52	36	-48	34	-44	31	-40	27	-36	25	-32	22	-28	20
CE700	23	-24	17	-20	11	-16	7	-12	8	-8	2	-4	-2	0	-4
CE700	24	4	-6	8	-9	12	-12	16	-14	20	-17	24	-20	28	-23
CE700	25	32	-24	36	-26	40	-28	44	-30	48	-35	52	-42	56	-45
CE700	26	60	-44	64	-44	68	-49	72	-65	76	-74	80	-78	84	-73
CE700	27	88	-58	92	-53	96	-51	100	-53	104	-55	108	-57	112	-59
CE700	28	116	-61	120	-63	124	-65	128	-71	132	-81	136	-89	140	-93
CE700	29	144	-97	148	-101	152	-105	156	-108	160	-111	164	-114	168	-118
CE700	2A	172	-121	176	-125	180	-128	184	-130	188	-131	192	-133	196	-134
CE700	2B	200	-135												
CE700	31570620	300	73	-135			-84	55	-80	54	-76	51	-72	49
CE700	32	-68	48	-64	47	-60	45	-56	42	-52	37	-48	32	-44	28
CE700	33	-40	25	-36	21	-32	18	-28	16	-24	10	-20	7	-16	4
CE700	34	-12	1	-8	0	-4	-3	0	-6	4	-9	8	-12	12	-15
CE700	35	16	-18	20	-21	24	-24	28	-26	32	-29	36	-31	40	-33
CE700	36	44	-35	48	-36	52	-38	56	-41	60	-49	64	-54	68	-54
CE700	37	72	-51	76	-50	80	-51	84	-60	88	-70	92	-78	96	-79
CE700	38	100	-66	104	-58	108	-55	112	-54	116	-55	120	-58	124	-61
CE700	39	128	-62	132	-66	136	-69	140	-74	144	-78	148	-86	152	-96
CE700	3A	156	-104	160	-108	164	-114	168	-118	172	-122	176	-125	180	-127
CE700	3B	184	-131	188	-133	192	-133	196	-133	200	-134	204	-135		
CE700	41570620	500	73	-135			-84	55	-80	52	-76	51	-72	50
CE700	42	-68	50	-64	49	-60	47	-56	43	-52	37	-48	31	-44	27
CE700	43	-40	23	-36	20	-32	18	-28	13	-24	9	-20	4	-16	3
CE700	44	-12	0	-8	-3	-4	-6	0	-10	4	-13	8	-16	12	-18
CE700	45	16	-21	20	-22	24	-24	28	-26	32	-28	36	-31	40	-33
CE700	46	44	-36	48	-37	52	-37	56	-39	60	-46	64	-55	68	-56
CE700	47	72	-53	76	-50	80	-49	84	-56	88	-68	92	-77	96	-84
CE700	48	100	-83	104	-70	108	-61	112	-57	116	-56	120	-57	124	-59
CE700	49	128	-61	132	-63	136	-66	140	-70	144	-74	148	-77	152	-81
CE700	4A	156	-88	160	-98	164	-112	168	-116	172	-123	176	-127	180	-129
CE700	4B	184	-132	188	-133	192	-133	196	-133	200	-134	204	-135		

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Table C2 (Continued)

CE700	51570620	1000	73	-135			-84	55	-80	54	-76	52	-72	51
CE700	52	-68	51	-64	51	-60	49	-56	43	-52	37	-48	31	-44	26
CE700	53	-40	21	-36	17	-32	13	-28	8	-24	4	-20	-1	-16	-6
CE700	54	-12	-9	-8	-13	-4	-16	0	-19	4	-22	8	-23	12	-24
CE700	55	16	-25	20	-26	24	-28	28	-30	32	-31	36	-33	40	-36
CE700	56	44	-37	48	-41	52	-48	56	-52	60	-52	64	-48	68	-45
CE700	57	72	-45	76	-48	80	-54	84	-57	88	-59	92	-59	96	-59
CE700	58	100	-58	104	-61	108	-67	112	-81	116	-90	120	-93	124	-86
CE700	59	128	-73	132	-66	136	-63	140	-62	144	-61	148	-63	152	-65
CE700	5A	156	-66	160	-70	164	-78	168	-90	172	-103	176	-116	180	-124
CE700	5B	184	-131	188	-133	192	-134	196	-134	200	-134	204	-135		
CE700	61570620	1500	74	-135			-84	56	-80	54	-76	52	-72	52
CE700	62	-68	52	-64	51	-60	48	-56	43	-52	37	-48	31	-44	24
CE700	63	-40	17	-36	12	-32	7	-28	2	-24	-3	-20	-9	-16	-13
CE700	64	-12	-16	-8	-19	-4	-22	0	-25	4	-28	8	-28	12	-30
CE700	65	16	-30	20	-30	24	-31	28	-32	32	-33	36	-34	40	-35
CE700	66	44	-36	48	-39	52	-42	56	-45	60	-46	64	-47	68	-47
CE700	67	72	-47	76	-48	80	-49	84	-51	88	-56	92	-60	96	-66
CE700	68	100	-67	104	-67	108	-64	112	-63	116	-68	120	-80	124	-90
CE700	69	128	-91	132	-84	136	-74	140	-66	144	-61	148	-61	152	-62
CE700	6A	156	-67	160	-71	164	-75	168	-78	172	-84	176	-95	180	-107
CE700	6B	184	-122	188	-133	192	-133	196	-133	200	-134	204	-134	208	-135
CE700	71570620	2000	75	-133			-84	56	-80	55	-76	55	-72	55
CE700	72	-68	52	-64	42	-60	34	-56	28	-52	23	-48	17	-44	12
CE700	73	-40	7	-36	2	-32	-1	-28	-5	-24	-8	-20	-11	-16	-14
CE700	74	-12	-16	-8	-18	-4	-21	0	-23	4	-25	8	-26	12	-27
CE700	75	16	-28	20	-29	24	-30	28	-32	32	-33	36	-35	40	-37
CE700	76	44	-39	48	-41	52	-43	56	-45	60	-46	64	-48	68	-49
CE700	77	72	-51	76	-53	80	-55	84	-57	88	-58	92	-59	96	-59
CE700	78	100	-59	104	-61	108	-63	112	-66	116	-68	120	-75	124	-84
CE700	79	128	-87	132	-86	136	-81	140	-77	144	-73	148	-70	152	-69
CE700	7A	156	-69	160	-70	164	-71	168	-73	172	-76	176	-79	180	-81
CE700	7B	184	-86	188	-97	192	-112	196	-124	200	-131	204	-133	208	-133
CE700	7C	212	-135												
CE700	81570620	3000	78	-135			-88	58	-84	56	-80	56	-76	56
CE700	82	-72	40	-68	33	-64	27	-60	22	-56	16	-52	10	-48	4
CE700	83	-44	0	-40	-4	-36	-7	-32	-11	-28	-14	-24	-17	-20	-20
CE700	84	-16	-22	-12	-24	-8	-25	-4	-25	0	-26	4	-26	8	-26
CE700	85	12	-26	16	-27	20	-28	24	-29	28	-31	32	-33	36	-35
CE700	86	40	-37	44	-39	48	-41	52	-43	56	-44	60	-45	64	-46
CE700	87	68	-48	72	-51	76	54	80	-55	84	-55	88	-55	92	-55
CE700	88	96	-56	100	-57	104	-59	108	-62	112	-64	116	-67	120	-70
CE700	89	124	-73	128	-74	132	-75	136	-75	140	-70	144	-68	148	-70
CE700	8A	152	-70	156	-68	160	-68	164	-69	168	-70	172	-72	176	-75
CE700	8B	180	-78	184	-81	188	-86	192	-91	196	-101	200	-120	204	-132
CE700	8C	208	-133	212	-134	216	-135	220	-135						

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Table C2 (Continued)

CE700	91570620	4000	77	-135				-84	57	-80	56	-76	56	-72	41
CE700	92	-68	34	-64	27	-60	20	-56	13	-52	7	-48	2	-44	-2
CE700	93	-40	-7	-36	-11	-32	-14	-28	-17	-24	-19	-20	-20	-16	-21
CE700	94	-12	-22	-8	-23	-4	-25	0	-27	4	-39	8	-35	12	-29
CE700	95	16	-25	20	-24	24	-26	28	-26	32	-28	36	-30	40	-32
CE700	96	44	-34	48	-36	52	-38	56	-38	60	-40	64	-41	68	-42
CE700	97	72	-43	76	-45	80	-46	84	-47	88	-47	92	-49	96	-52
CE700	98	100	-52	104	-52	108	-53	112	-55	116	-64	120	-76	124	-83
CE700	99	128	-81	132	-71	136	-64	140	-61	144	-61	148	-62	152	-65
CE700	9A	156	-68	160	-71	164	-75	168	-78	172	-83	176	-87	180	-91
CE700	9B	184	-97	188	-106	192	-115	196	-121	200	-128	204	-132	208	-134
CE700	9C	212	-135	216	-135	220	-135								
CE700	101570620	5000	78	-135				-84	56	-80	56	-76	56	-72	41
CE700	102	-68	34	-64	27	-60	21	-56	16	-52	12	-48	7	-44	2
CE700	103	-40	-2	-36	-6	-32	-10	-28	-13	-24	-15	-20	-18	-16	-19
CE700	104	-12	-21	-8	-22	-4	-23	0	-23	4	-24	8	-26	12	-32
CE700	105	16	-31	20	-25	24	-26	28	-28	32	-30	36	-31	40	-33
CE700	106	44	-34	48	-36	52	-38	56	-40	60	-42	64	-44	68	-46
CE700	107	72	-47	76	-49	80	-49	84	-50	88	-51	92	-53	96	-56
CE700	108	100	-59	104	-59	108	-58	112	-58	116	-64	120	-71	124	-71
CE700	109	128	-64	132	-59	136	-58	140	-59	144	-61	148	-64	152	-67
CE700	10A	156	-70	160	-74	164	-78	168	-83	172	-88	176	-94	180	-101
CE700	10B	184	-108	188	-116	192	-123	196	-126	200	-129	204	-132	208	-134
CE700	10C	212	-135	216	-135	220	-135	224	-135						
CE700	111570620	6000	74	-135				-84	56	-80	55	-76	54	-72	42
CE700	112	-68	35	-64	29	-60	23	-56	18	-52	12	-48	8	-44	5
CE700	113	-40	2	-36	-3	-32	-7	-28	-9	-24	-11	-20	-14	-16	-16
CE700	114	-12	-18	-8	-20	-4	-21	0	-22	4	-34	8	-30	12	-25
CE700	115	16	-23	20	-24	24	-29	28	-28	32	-28	36	-30	40	-32
CE700	116	44	-35	48	-36	52	-38	56	-40	60	-42	64	-44	68	-46
CE700	117	72	-48	76	-49	80	-50	84	-51	88	-53	92	-55	96	-57
CE700	118	100	-62	104	-64	108	-62	112	-60	116	-66	120	-74	124	-75
CE700	119	128	-68	132	-61	136	-59	140	-58	144	-60	148	-62	152	-64
CE700	11A	156	-68	160	-72	164	-75	168	-79	172	-84	176	-90	180	-98
CE700	11B	184	-107	188	-115	192	-123	196	-132	200	-135	204	-135	208	-135
CE700	121570620	7000	77	-135				-96	62	-92	60	-88	59	-84	57
CE700	122	-80	57	-76	50	-72	40	-68	36	-64	30	-60	26	-56	18
CE700	123	-52	12	-48	8	-44	8	-40	5	-36	-4	-32	-5	-28	-8
CE700	124	-24	-10	-20	-13	-16	-16	-12	-18	-8	-20	-4	-22	0	-23
CE700	125	4	-24	8	-33	12	-30	16	-27	20	-27	24	-34	28	-29
CE700	126	32	-28	36	-31	40	-33	44	-34	48	-35	52	-36	56	-39
CE700	127	60	-42	64	-43	68	-46	72	-50	76	-50	80	-49	84	-51
CE700	128	88	-53	92	-56	96	-61	100	-70	104	-70	108	-65	112	-59
CE700	129	116	-59	120	-67	124	-75	128	-75	132	-62	136	-59	140	-59
CE700	12A	144	-59	148	-60	152	-62	156	-67	160	-69	164	-75	168	-79
CE700	12B	172	-83	176	-89	180	-98	184	-111	188	-121	192	-131	196	-132
CE700	12C	200	-133	204	-134	208	-135								

(Continued)

Table C2 (Concluded)

CE700	131570620	8000	78	-135			-96	62	-92	60	-88	59	-84	57
CE700	132	-80	57	-76	51	-72	42	-68	37	-64	30	-60	24	-56	19
CE700	133	-52	15	-48	7	-44	7	-40	3	-36	-2	-32	-6	-28	-10
CE700	134	-24	-13	-20	-16	-16	-18	-12	-19	-8	-20	-4	-21	0	-38
CE700	135	4	-35	8	-26	12	-24	16	-24	20	-24	24	-25	28	-26
CE700	136	32	-28	36	-30	40	-32	44	-34	48	-36	52	-37	56	-40
CE700	137	60	-44	64	-46	68	-48	72	-50	76	-50	80	-49	84	-50
CE700	138	88	-52	92	-55	96	-60	100	-64	104	-64	108	-60	112	-59
CE700	139	116	-62	120	-72	124	-77	128	-68	132	-61	136	-59	140	-59
CE700	13A	144	-59	148	-61	152	-63	156	-67	160	-70	164	-75	168	-80
CE700	13B	172	-84	176	-90	180	-99	184	-111	188	-122	192	-131	196	-132
CE700	13C	200	-132	204	-133	208	-134	212	-135						
CE700	141570620	9000	76	-135			-96	62	-92	60	-88	59	-84	58
CE700	142	-80	57	-76	49	-72	43	-68	36	-64	29	-60	23	-56	18
CE700	143	-52	14	-48	9	-44	3	-40	1	-36	-3	-32	-7	-28	-12
CE700	144	-24	-15	-20	-19	-16	-21	-12	-22	-8	-23	-4	-24	0	-40
CE700	145	4	-42	8	-31	12	-26	16	-23	20	-23	24	-24	28	-26
CE700	146	32	-28	36	-29	40	-31	44	-33	48	-34	52	-36	56	-38
CE700	147	60	-41	64	-44	68	-45	72	-47	76	-48	80	-48	84	-48
CE700	148	88	-50	92	-53	96	-60	100	-62	104	-61	108	-58	112	-58
CE700	149	116	-61	120	-69	124	-72	128	-63	132	-59	136	-58	140	-59
CE700	14A	144	-60	148	-61	152	-65	156	-68	160	-71	164	-76	168	-80
CE700	14B	172	-87	176	-95	180	-106	184	-116	188	-125	192	-131	196	-133
CE700	14C	200	-134	204	-135										
CE700	151570620	10000	76	-135			-88	59	-84	57	-80	57	-76	49
CE700	152	-72	43	-68	36	-64	28	-60	23	-56	18	-52	13	-48	11
CE700	153	-44	3	-40	1	-36	-5	-32	-8	-28	-13	-24	-16	-20	-19
CE700	154	-16	-20	-12	-22	-8	-24	-4	-25	0	-45	4	-47	8	-36
CE700	155	12	-25	16	-22	20	-22	24	-23	28	-25	32	-27	36	-28
CE700	156	40	-30	44	-32	48	-34	52	-36	56	-38	60	-40	64	-43
CE700	157	68	-45	72	-46	76	-47	80	-47	84	-48	88	-50	92	-54
CE700	158	96	-59	100	-61	104	-61	108	-59	112	-58	116	-62	120	-69
CE700	159	124	-69	128	-62	132	-59	136	-58	140	-59	144	-60	148	-62
CE700	15A	152	-65	156	-68	160	-71	164	-76	168	-81	172	-89	176	-97
CE700	15B	180	-107	184	-117	188	-124	192	-130	196	-133	200	-133	204	-132
CE700	15C	208	-134	212	-135										

Table C3

Profile Survey Data: 0.40-mm Sand

CASE 101

CE101	11620702	0	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	12	-80	43	-76	42	-72	42	-68	42	-64	40	-60	37	-56	35
CE101	13	-52	31	-48	28	-44	26	-40	24	-36	21	-32	18	-28	15
CE101	14	-24	13	-20	11	-16	8	-12	6	-8	4	-4	2	0	0
CE101	15	4	-2	8	-5	12	-8	16	-10	20	-13	24	-15	28	-20
CE101	16	32	-22	36	-24	40	-27	44	-29	48	-33	52	-36	56	-40
CE101	17	60	-43	64	-45	68	-47	72	-50	76	-53	80	-56	84	-59
CE101	18	88	-61	92	-64	96	-67	100	-70	104	-72	108	-75	112	-78
CE101	19	116	-80	120	-83	124	-86	128	-89	132	-91	136	-94	140	-97
CE101	1A	144	-100	148	-103	152	-105	156	-107	160	-109	164	-112	168	-114
CE101	1B	172	-117	176	-120	180	-122	184	-125	188	-128	192	-130	196	-133
CE101	1C	200	-134	204	-136	208	-138	212	-140	216	-143				
CE101	21620702	100	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	22	-80	43	-76	42	-72	42	-68	40	-64	37	-60	35	-56	32
CE101	23	-52	29	-48	27	-44	26	-40	25	-36	23	-32	23	-28	20
CE101	24	-24	18	-20	18	-16	17	-12	15	-8	12	-4	6	0	0
CE101	25	4	-4	8	-10	12	-14	16	-18	20	-22	24	-23	28	-25
CE101	26	32	-27	36	-29	40	-33	44	-36	48	-42	52	-49	56	-57
CE 01	27	60	-52	64	-44	68	-42	72	-44	76	-46	80	-49	84	-57
CE101	28	88	-61	92	-64	96	-70	100	-71	104	-76	108	-79	112	-84
CE101	29	116	-85	120	-87	124	-89	128	-93	132	-94	136	-97	140	-100
CE101	2A	144	-101	148	-105	152	-108	156	-110	160	-112	164	-114	168	-118
CE101	2B	172	-121	176	-122	180	-124	184	-127	188	-130	192	-133	196	-135
CE101	2C	200	-137	204	-139	208	-140	212	-140	216	-145				
CE101	31620702	300	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	32	-80	43	-76	42	-72	42	-68	40	-64	37	-60	35	-56	32
CE101	33	-52	30	-48	30	-44	29	-40	28	-36	27	-32	25	-28	23
CE101	34	-24	20	-20	18	-16	16	-12	13	-8	10	-4	5	0	1
CE101	35	4	-3	8	-7	12	-10	16	-13	20	-16	24	-18	28	-19
CE101	36	32	-21	36	-26	40	-31	44	-32	48	-35	52	-47	56	-56
CE101	37	60	-52	64	-44	68	-41	72	-44	76	-48	80	-54	84	-64
CE101	38	88	-67	92	-72	96	-75	100	-77	104	-82	108	-87	112	-88
CE101	39	116	-89	120	-91	124	-93	128	-94	132	-96	136	-98	140	-102
CE101	3A	144	-103	148	-107	152	-109	156	-112	160	-115	164	-115	168	-119
CE101	3B	172	-122	176	-122	180	-124	184	-129	188	-132	192	-134	196	-137
CE101	3C	200	-138	204	-140	208	-142	212	-144	216	-146				

(Continued)

Table C3 (Continued)

CE101	41620702	500	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	42	-80	43	-76	42	-72	42	-68	40	-64	37	-60	35	-56	33
CE101	43	-52	32	-48	30	-44	30	-40	30	-36	31	-32	29	-28	28
CE101	44	-24	26	-20	23	-16	21	-12	17	-8	14	-4	10	0	5
CE101	45	4	0	8	-4	12	-9	16	-14	20	-18	24	-21	28	-22
CE101	46	32	-24	36	-26	40	-32	44	-36	48	-38	52	-43	56	-53
CE101	47	60	-56	64	-50	68	-44	72	-43	76	-45	80	-49	84	-52
CE101	48	88	-60	92	-68	96	-76	100	-80	104	-86	108	-87	112	-89
CE101	49	116	-92	120	-94	124	-94	128	-97	132	-100	136	-101	140	-104
CE101	4A	144	-106	148	-108	152	-111	156	-113	160	-116	164	-119	168	-121
CE101	4B	172	-123	176	-126	180	-128	184	-129	188	-130	192	-133	196	-136
CE101	4C	200	-139	204	-141	208	-142	212	-143	216	-148				
CE101	51620702	1000	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	52	-80	43	-76	42	-72	42	-68	40	-64	37	-60	35	-56	33
CE101	53	-52	33	-48	34	-44	34	-40	34	-36	35	-32	37	-28	37
CE101	54	-24	35	-20	32	-16	29	-12	26	-8	21	-4	17	0	11
CE101	55	4	5	8	0	12	-5	16	-11	20	-17	24	-21	28	-25
CE101	56	32	-27	36	-28	40	-29	44	-32	48	-33	52	-37	56	-43
CE101	57	60	-54	64	-58	68	-53	72	-48	76	-46	80	-48	84	-52
CE101	58	88	-57	92	-61	96	-67	100	-77	104	-87	108	-91	112	-94
CE101	59	116	-98	120	-101	124	-103	128	-106	132	-107	136	-108	140	-110
CE101	5A	144	-112	148	-114	152	-116	156	-119	160	-121	164	-123	168	-124
CE101	5B	172	-126	176	-128	180	-130	184	-132	188	-133	192	-135	196	-137
CE101	5C	200	-140	204	-143	208	-145	212	-146	216	-146				
CE101	61620702	1200	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	62	-80	43	-76	42	-72	42	-68	40	-64	38	-60	35	-56	33
CE101	63	-52	33	-48	34	-44	35	-40	35	-36	37	-32	39	-28	40
CE101	64	-24	37	-20	33	-16	29	-12	25	-8	21	-4	17	0	11
CE101	65	4	5	8	0	12	-6	16	-12	20	-16	24	-20	28	-23
CE101	66	32	-26	36	-28	40	-30	44	-34	48	-38	52	-39	56	-44
CE101	67	60	-51	64	-51	68	-45	72	-43	76	-45	80	-48	84	-52
CE101	68	88	-56	92	-61	96	-68	100	-76	104	-85	108	-90	112	-96
CE101	69	116	-101	120	-103	124	-105	128	-107	132	-110	136	-110	140	-112
CE101	6A	144	-113	148	-115	152	-116	156	-120	160	-123	164	-125	168	-127
CE101	6B	172	-127	176	-129	180	-132	184	-132	188	-134	192	-136	196	-138
CE101	6C	200	-139	204	-143	208	-145	212	-146	216	-148				
CE101	71620702	1500	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	72	-80	43	-76	42	-72	42	-68	40	-64	38	-60	35	-56	33
CE101	73	-52	33	-48	34	-44	35	-40	35	-36	37	-32	41	-28	42
CE101	74	-24	38	-20	35	-16	31	-12	28	-8	24	-4	19	0	13
CE101	75	4	7	8	2	12	-3	16	-10	20	-17	24	-21	28	-26
CE101	76	32	-29	36	-30	40	-31	44	-32	48	-35	52	-38	56	-40
CE101	77	60	-46	64	-55	68	-55	72	-47	76	-45	80	-46	84	-49
CE101	78	88	-53	92	-58	96	-63	100	68	104	-73	108	-87	112	-98
CE101	79	116	-102	120	-104	124	-109	128	-112	132	-113	136	-114	140	-116
CE101	7A	144	-115	148	-117	152	-120	156	-121	160	-123	164	-125	168	-126
CE101	7B	172	-129	176	-130	180	-134	184	-135	188	-136	192	-137	196	-138
CE101	7C	200	-142	204	-145	208	-147	212	-148	216	-149				

(Continued)

Table C3 (Continued)

CE101	81620702	1900	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	82	-80	43	-76	42	-72	42	-68	41	-64	38	-60	35	-56	34
CE101	83	-52	34	-48	34	-44	35	-40	35	-36	39	-32	43	-28	43
CE101	84	-24	39	-20	36	-16	33	-12	29	-8	26	-4	21	0	15
CE101	85	4	8	8	2	12	-3	16	-8	20	-15	24	-22	28	-26
CE101	86	32	-31	36	-32	40	-33	44	-35	48	-41	52	-45	56	-43
CE101	87	60	-41	64	-45	68	-49	72	-47	76	-43	80	-44	84	-47
CE101	88	88	-51	92	-55	96	-60	100	-64	104	-70	108	-78	112	-93
CE101	89	116	-103	120	-109	124	-112	128	-110	132	-112	136	-115	140	-117
CE101	8A	144	-120	148	-122	152	-123	156	-123	160	-125	164	-130	168	-130
CE101	8B	172	-130	176	-130	180	-134	184	-135	188	-137	192	-141	196	-142
CE101	8C	200	-142	204	-145	208	-146	212	-146	216	-149				
CE101	91620702	2000	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	92	-80	43	-76	42	-72	42	-68	40	-64	38	-60	36	-56	34
CE101	93	-52	35	-48	36	-44	36	-40	36	-36	40	-32	44	-28	43
CE101	94	-24	40	-20	37	-16	34	-12	31	-8	27	-4	22	0	16
CE101	95	4	9	8	2	12	-3	16	-9	20	-16	24	-22	28	-26
CE101	96	32	-29	36	-31	40	-33	44	-37	48	-45	52	-45	56	-42
CE101	97	60	-40	64	-44	68	-47	72	-44	76	-42	80	-43	84	-46
CE101	98	88	-50	92	-55	96	-59	100	-64	104	-70	108	-76	112	-89
CE101	99	116	-102	120	-105	124	-109	128	-115	132	-117	136	-118	140	-121
CE101	9A	144	-122	148	-121	152	-123	156	-126	160	-127	164	-128	168	-130
CE101	9B	172	-131	176	-132	180	-137	184	-138	188	-140	192	-142	196	-143
CE101	9C	200	-145	204	-145	208	-145	212	-146	216	-148				
CE101	101620702	2550	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	102	-80	43	-76	43	-72	42	-68	40	-64	38	-60	35	-56	34
CE10	103	-52	34	-48	35	-44	37	-40	38	-36	41	-32	43	-28	42
CE101	104	-24	39	-20	35	-16	32	-12	29	-8	26	-4	20	0	16
CE101	105	4	10	8	4	12	-2	16	-8	20	-15	24	-20	28	-25
CE101	106	32	-29	36	-32	40	-32	44	-34	48	-39	52	-45	56	-44
CE101	107	60	-41	64	-41	68	-46	72	-48	76	-44	80	-44	84	-46
CE101	108	88	-48	92	-53	96	-58	100	-62	104	-67	108	-71	112	-85
CE101	109	116	-100	120	-108	124	-111	128	-114	132	-117	136	-117	140	-122
CE101	10A	144	-124	148	-125	152	-126	156	-127	160	-129	164	-130	168	-132
CE101	10B	172	-133	176	-135	180	-138	184	-140	188	-142	192	-144	196	-146
CE101	10C	200	-145	204	-146	208	-146	212	-147	216	-145				
CE101	111620702	3000	79	-150			-96	47	-92	47	-88	45	-84	44
CE101	112	-80	43	-76	43	-72	42	-68	40	-64	38	-60	35	-56	34
CE101	113	-52	34	-48	35	-44	37	-40	39	-36	41	-32	43	-28	42
CE101	114	-24	39	-20	36	-16	32	-12	29	-8	25	-4	21	0	16
CE101	115	4	10	8	4	12	-1	16	-7	20	-13	24	-19	28	-23
CE101	116	32	-26	36	-29	40	-31	44	-32	48	-34	52	-38	56	-41
CE101	117	60	-42	64	-49	68	-52	72	-48	76	-45	80	-46	84	-48
CE101	118	88	-51	92	-55	96	-59	100	-64	104	-68	108	-75	112	-80
CE101	119	116	-90	120	-101	124	-110	128	-114	132	-117	136	-120	140	-123
CE101	11A	144	-124	148	-125	152	-128	156	-129	160	-129	164	-131	168	-133
CE101	11B	172	-135	176	-137	180	-139	184	-142	188	-143	192	-144	196	-142
CE101	11C	200	-146	204	-147	208	-147	212	-147	216	-146				

(Continued)

Table C3 (Continued)

CASE 201

CE201	11620713	0	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	12	-80	50	-76	50	-72	49	-68	36	-64	34	-60	33	-56	31
CE201	13	-52	28	-48	26	-44	26	-40	24	-36	21	-32	19	-28	17
CE201	14	-24	16	-20	12	-16	10	-12	6	-8	4	-4	2	0	0
CE201	15	4	-3	8	-5	12	-9	16	-11	20	-15	24	-17	28	-20
CE201	16	32	-22	36	-26	40	-28	44	-30	48	-32	52	-36	56	-38
CE201	17	60	-42	64	-45	68	-46	72	-51	76	-55	80	-57	84	-60
CE201	18	88	-62	92	-65	96	-67	100	-70	104	-72	108	-76	112	-79
CE201	19	116	-82	120	-83	124	-88	128	-90	132	-93	136	-95	140	-99
CE201	1A	144	-101	148	-105	152	-107	156	-107	160	-112	164	-115	168	-119
CE201	1B	172	-123	176	-125	180	-127	184	-128	188	-132	192	-134	196	-136
CE201	1C	200	-138	204	-142	208	-144	212	-145	216	-146				
CE201	21620713	100	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	22	-80	50	-76	50	-72	49	-68	36	-64	34	-60	33	-56	31
CE201	23	-52	29	-48	27	-44	26	-40	25	-36	24	-32	22	-28	20
CE201	24	-24	19	-20	18	-16	22	-12	21	-8	18	-4	14	0	10
CE201	25	4	4	8	0	12	-6	16	-11	20	-17	24	-22	28	-26
CE201	26	32	-28	36	-31	40	-32	44	-33	48	-36	52	-39	56	-42
CE201	27	60	-46	64	-49	68	-49	72	-49	76	-51	80	-55	84	-59
CE201	28	88	-65	92	-62	96	-67	100	-73	104	-75	108	-77	112	-80
CE201	29	116	-82	120	-84	124	-87	128	-89	132	-92	136	-96	140	-98
CE201	2A	144	-100	148	-103	152	-106	156	-109	160	-110	164	-113	168	-115
CE201	2B	172	-120	176	-122	180	-126	184	-128	188	-131	192	-133	196	-135
CE201	2C	200	-136	204	-138	208	-140	212	-142	216	-143				
CE201	31620713	200	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	32	-80	50	-76	50	-72	49	-68	37	-64	35	-60	33	-56	31
CE201	33	-52	30	-48	28	-44	27	-40	25	-36	24	-32	22	-28	20
CE201	34	-24	21	-20	30	-16	31	-12	30	-8	27	-4	23	0	17
CE201	35	4	10	8	2	12	-2	16	-8	20	-15	24	-23	28	-28
CE201	36	32	-31	36	-35	40	-38	44	-38	48	-37	52	-40	56	-53
CE201	37	60	-52	64	-53	68	-51	72	-51	76	-51	80	-59	84	-60
CE201	38	88	-69	92	-64	96	-70	100	-70	104	-70	108	-77	112	-79
CE201	39	116	-83	120	-86	124	-88	128	-91	132	-94	136	-96	140	-99
CE201	3A	144	-102	148	-105	152	-106	156	-109	160	-111	164	-114	168	-117
CE201	3B	172	-121	176	-125	180	-128	184	-129	188	-132	192	-134	196	-135
CE201	3C	200	-136	204	-139	208	-139	212	-142	216	-143				
CE201	41620713	300	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	42	-80	50	-76	50	-72	49	-68	38	-64	36	-60	33	-56	31
CE201	43	-52	29	-48	28	-44	27	-40	25	-36	24	-32	22	-28	21
CE201	44	-24	30	-20	38	-16	39	-12	36	-8	33	-4	28	0	20
CE201	45	4	13	8	13	12	-1	16	-5	20	-12	24	-20	28	-27
CE201	46	32	-32	36	-35	40	-37	44	-39	48	-40	52	-41	56	-45
CE201	47	60	-57	64	-59	68	-60	72	-59	76	-62	80	-63	84	-57
CE201	48	88	-55	92	-58	96	-64	100	-71	104	-74	108	-81	112	-80
CE201	49	116	-81	120	-85	124	-83	128	-93	132	-97	136	-99	140	-103
CE201	4A	144	-106	148	-109	152	-108	156	-110	160	-111	164	-114	168	-118
CE201	4B	172	-120	176	-123	180	-127	184	-128	188	-132	192	-136	196	-136
CE201	4C	200	-138	204	-138	208	-136	212	-140	216	-143				

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(Sheet 4 of 7)

Table C3 (Continued)

CE201	51620713	500	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	52	-80	50	-76	50	-72	49	-68	38	-64	35	-60	34	-56	32
CE201	53	-52	30	-48	28	-44	27	-40	25	-36	23	-32	22	-28	23
CE201	54	-24	37	-20	43	-16	43	-12	40	-8	35	-4	28	0	20
CE201	55	4	12	8	3	12	-3	16	-11	20	-19	24	-22	28	-28
CE201	56	32	-29	36	-34	40	-36	44	-39	48	-42	52	-48	56	-50
CE201	57	60	-55	64	-48	68	-47	72	-49	76	-47	80	-49	84	-70
CE201	58	88	-67	92	-65	96	-65	100	-68	104	-76	108	-79	112	-89
CE201	59	116	-87	120	-90	124	-87	128	-96	132	-103	136	-106	140	-108
CE201	5A	144	-111	148	-113	152	-111	156	-111	160	-112	164	-115	168	-119
CE201	5B	172	-123	176	-127	180	-129	184	-130	188	-131	192	-135	196	-136
CE201	5C	200	-136	204	-137	208	-138	212	-142	216	-145				
CE201	61620713	1000	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	62	-80	50	-76	50	-72	49	-68	40	-64	35	-60	34	-56	34
CE201	63	-52	33	-48	32	-44	29	-40	27	-36	25	-32	25	-28	39
CE201	64	-24	47	-20	46	-16	43	-12	38	-8	33	-4	28	0	22
CE201	65	4	15	8	7	12	0	16	-5	20	-12	24	-18	28	-23
CE201	66	32	-28	36	-32	40	-34	44	-38	48	-43	52	-52	56	-52
CE201	67	60	-44	64	-42	68	-47	72	-47	76	-47	80	-58	84	-63
CE201	68	88	-63	92	-64	96	-67	100	-84	104	-80	108	-90	112	-85
CE201	69	116	-90	120	-89	124	-100	128	-104	132	-107	136	-110	140	-114
CE201	6A	144	-116	148	-117	152	-119	156	-118	160	-119	164	-119	168	-122
CE201	6B	172	-125	176	-127	180	-130	184	-132	188	-134	192	-133	196	-135
CE201	6C	200	-135	204	-137	208	-139	212	-142	216	-143				
CE201	71620713	1500	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	72	-80	50	-76	50	-72	49	-68	41	-64	38	-60	40	-56	39
CE201	73	-52	37	-48	33	-44	29	-40	27	-36	28	-32	32	-28	42
CE201	74	-24	49	-20	49	-16	46	-12	41	-8	35	-4	30	0	23
CE201	75	4	16	8	8	12	2	16	-4	20	-10	24	-16	28	-21
CE201	76	32	-25	36	-29	40	-31	44	-35	48	-44	52	-51	56	-43
CE201	77	60	-37	64	-40	68	-44	72	-47	76	-54	80	-55	84	-54
CE201	78	88	-57	92	-65	96	-77	100	-83	104	-85	108	-82	112	-85
CE201	79	116	-95	120	-98	124	-107	128	-104	132	-108	136	-114	140	-121
CE201	7A	144	-123	148	-125	152	-125	156	-124	160	-122	164	-122	168	-123
CE201	7B	172	-126	176	-127	180	-129	184	-131	188	-133	192	-134	196	-136
CE201	7C	200	-137	204	-139	208	-141	212	-140	216	-143				
CE201	81620713	2000	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	82	-80	50	-76	50	-72	49	-68	41	-64	38	-60	40	-56	39
CE201	83	-52	37	-48	33	-44	29	-40	27	-36	28	-32	32	-28	42
CE201	84	-24	49	-20	47	-16	48	-12	44	-8	37	-4	31	0	25
CE201	85	4	18	8	10	12	3	16	-1	20	-9	24	-16	28	-21
CE201	86	32	-26	36	-31	40	-34	44	-36	48	-36	52	-39	56	-50
CE201	87	60	-50	64	-43	68	-40	72	-42	76	-46	80	-49	84	-52
CE201	88	88	-68	92	-69	96	-80	100	-86	104	-83	108	-82	112	-89
CE201	89	116	-91	120	-94	124	-101	128	-106	132	-115	136	-118	140	-122
CE201	8A	144	-125	148	-128	152	-127	156	-127	160	-128	164	-127	168	-127
CE201	8B	172	-128	176	-129	180	-131	184	-131	188	-133	192	-135	196	-137
CE201	8C	200	-137	204	-140	208	-139	212	-142	216	-143				

(Continued)

Table C3 (Continued)

CE201	91620713	3000	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	92	-80	50	-76	50	-72	49	-68	41	-64	38	-60	40	-56	39
CE201	93	-52	37	-48	33	-44	29	-40	27	-36	28	-32	32	-28	47
CE201	94	-24	45	-20	44	-16	46	-12	47	-8	42	-4	35	0	29
CE201	95	4	21	8	13	12	5	16	0	20	-7	24	-14	28	-19
CE201	96	32	-22	36	-28	40	-32	44	-33	48	-35	52	-40	56	-51
CE201	97	60	-47	64	-39	68	-38	72	-41	76	-44	80	-47	84	-58
CE201	98	88	-67	92	-81	96	-80	100	-88	104	-80	108	-83	112	-89
CE201	99	116	-95	120	-98	124	-106	128	-109	132	-113	136	-120	140	-123
CE201	9A	144	-124	148	-128	152	-133	156	-136	160	-134	164	-135	168	-133
CE201	9B	172	-130	176	-131	180	-130	184	-130	188	-133	192	-134	196	-136
CE201	9C	200	-139	204	-142	208	-142	212	-142	216	-144				
CE201	101620713	4000	79	-150			-96	50	-92	50	-88	50	-84	50
CE201	102	-80	50	-76	50	-72	49	-68	41	-64	38	-60	40	-56	39
CE201	103	-52	37	-48	33	-44	29	-40	27	-36	28	-32	43	-28	48
CE201	104	-24	45	-20	45	-16	45	-12	48	-8	42	-4	36	0	30
CE201	105	4	23	8	16	12	8	16	1	20	-5	24	-11	28	-18
CE201	106	32	-23	36	-26	40	-27	44	-34	48	-35	52	-38	56	-45
CE201	107	60	-52	64	-45	68	-41	72	-43	76	-45	80	-48	84	-53
CE201	108	88	-73	92	-81	96	-77	100	-76	104	-84	108	-99	112	-97
CE201	109	116	-99	120	-101	124	-98	128	-105	132	-110	136	-115	140	-115
CE201	10A	144	-116	148	-125	152	-134	156	-136	160	-139	164	-138	168	-136
CE201	10B	172	-135	176	-133	180	-132	184	-132	188	-135	192	-136	196	-138
CE201	10C	200	-140	204	-141	208	-142	212	-144	216	-145				
CASE 301															
CE301	11620615	0	79	-140			-100	57	-96	55	-92	52	-88	53
CE301	12	-84	54	-80	53	-76	52	-72	52	-68	49	-64	46	-60	44
CE301	13	-56	41	-52	37	-48	34	-44	31	-40	27	-36	24	-32	22
CE301	14	-28	19	-24	16	-20	13	-16	10	-12	7	-8	5	-4	2
CE301	15	0	0	4	-2	8	-4	12	-7	16	-10	20	-12	24	-15
CE301	16	28	-17	32	-20	36	-22	40	-25	44	-28	48	-30	52	-33
CE301	17	56	-35	60	-38	64	-41	68	-43	72	-46	76	-48	80	-51
CE301	18	84	-54	88	-57	92	-60	96	-62	100	-65	104	-67	108	-70
CE301	19	112	-73	116	-76	120	-79	124	-81	128	-84	132	-87	136	-90
CE301	1A	140	-93	144	-94	148	-97	152	-99	156	-101	160	-102	164	-104
CE301	1B	168	-106	172	-108	176	-110	180	-112	184	-114	188	-116	192	-118
CE301	1C	196	-120	200	-121	204	-120	208	-121	212	-120				
CE301	21620615	100	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	22	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	23	-56	41	-52	38	-48	35	-44	32	-40	30	-36	28	-32	26
CE301	24	-28	23	-24	20	-20	17	-16	13	-12	9	-8	5	-4	1
CE301	25	0	-1	4	-5	8	-8	12	-9	16	-10	20	-12	24	-14
CE301	26	28	-17	32	-20	36	-22	40	-24	44	-26	48	-29	52	-32
CE301	27	56	-37	60	-39	64	-40	68	-44	72	-53	76	-60	80	-58
CE301	28	84	-54	88	-54	92	-48	96	-52	100	-56	104	-63	108	-70
CE301	29	112	-70	116	-72	120	-78	124	-81	128	-84	132	-87	136	-89
CE301	2A	140	-91	144	-94	148	-98	152	-101	156	-101	160	-103	164	-106
CE301	2B	168	-110	172	-111	176	-112	180	-113	184	-115	188	-117	192	-118
CE301	2C	196	-118	200	-119	204	-120	208	-121	212	-123				

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Table C3 (Continued)

CE301	31620615	300	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	32	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	33	-56	41	-52	38	-48	35	-44	32	-40	30	-36	28	-32	26
CE301	34	-28	24	-24	22	-20	20	-16	17	-12	13	-8	9	-4	4
CE301	35	0	0	4	-4	8	-8	12	-16	16	-23	20	-16	24	-14
CE301	36	28	-15	32	-16	36	-17	40	-19	44	-21	48	-24	52	-28
CE301	37	56	-32	60	-37	64	-46	68	-55	72	-55	76	-48	80	-43
CE301	38	84	-43	88	-45	92	-48	96	-52	100	-59	104	-71	108	-75
CE301	39	112	-74	116	-78	120	-80	124	-80	128	-84	132	-86	136	-91
CE301	3A	140	-95	144	-95	148	-97	152	-102	156	-104	160	-107	164	-107
CE301	3B	168	-109	172	-112	176	-113	180	-115	184	-116	188	-117	192	-118
CE301	3C	196	-119	200	-121	204	-122	208	-123	212	-125				
CE301	41620615	500	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	42	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	43	-56	41	-52	38	-48	35	-44	33	-40	32	-36	31	-32	29
CE301	44	-28	27	-24	25	-20	22	-16	19	-12	15	-8	11	-4	6
CE301	45	0	1	4	-3	8	-6	12	-9	16	-15	20	-19	24	-15
CE301	46	28	-16	32	-17	36	-19	40	-21	44	-23	48	-26	52	-29
CE301	47	56	-31	60	-35	64	-42	68	-52	72	-58	76	-55	80	-47
CE301	48	84	-44	88	-45	92	-48	96	-51	100	-57	104	-65	108	-71
CE301	49	112	-76	116	-79	120	-80	124	-81	128	-84	132	-88	136	-95
CE301	4A	140	-100	144	-97	148	-99	152	-100	156	-103	160	-109	164	-110
CE301	4B	168	-110	172	-114	176	-118	180	-119	184	-119	188	-121	192	-120
CE301	4C	196	-121	200	-123	204	-123	208	-122	212	-124				
CE301	51620615	1000	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	52	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	53	-56	42	-52	39	-48	36	-44	35	-40	34	-36	34	-32	33
CE301	54	-28	32	-24	30	-20	27	-16	24	-12	21	-8	16	-4	11
CE301	55	0	5	4	0	8	-3	12	-6	16	-12	20	-19	24	-15
CE301	56	28	-14	32	-15	36	-18	40	-20	44	-22	48	-26	52	-29
CE301	57	56	-32	60	-38	64	-49	68	-53	72	-49	76	-43	80	-42
CE301	58	84	-44	88	-46	92	-49	96	-53	100	-59	104	-69	108	-75
CE301	59	112	-79	116	-82	120	-83	124	-86	128	-88	132	-92	136	-94
CE301	5A	140	-95	144	-99	148	-100	152	-102	156	-105	160	-107	164	-111
CE301	5B	168	-114	172	-116	176	-118	180	-119	184	-122	188	-124	192	-125
CE301	5C	196	-125	200	-125	204	-125	208	-124	212	-129				
CE301	61620615	1500	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	62	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	63	-56	42	-52	39	-48	36	-44	35	-40	35	-36	35	-32	36
CE301	64	-28	37	-24	36	-20	35	-16	31	-12	27	-8	23	-4	19
CE301	65	0	15	4	10	8	4	12	0	16	-3	20	-8	24	-15
CE301	66	28	-19	32	-22	36	-23	40	-25	44	-26	48	-29	52	-31
CE301	67	56	-36	60	-39	64	-42	68	-51	72	-58	76	-57	80	-50
CE301	68	84	-47	88	-52	92	-55	96	-54	100	-58	104	-61	108	-66
CE301	69	112	-73	116	-79	120	-85	124	-89	128	-92	132	-95	136	-98
CE301	6A	140	-99	144	-101	148	-104	152	-105	156	-107	160	-109	164	-110
CE301	6B	168	-114	172	-117	176	-118	180	-121	184	-124	188	-125	192	-124
CE301	6C	196	-125	200	-128	204	-130	208	-128	212	-130				

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Table C3 (Continued)

CE301	71620615	2000	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	72	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	73	-56	42	-52	39	-48	36	-44	35	-40	35	-36	37	-32	41
CE301	74	-28	42	-24	41	-20	39	-16	36	-12	32	-8	28	-4	24
CE301	75	0	19	4	13	8	7	12	2	16	-3	20	-9	24	-14
CE301	76	28	-18	32	-21	36	-24	40	-26	44	-28	48	-29	52	-32
CE301	77	56	-36	60	-39	64	-43	68	-53	72	-62	76	-63	80	-57
CE301	78	84	-50	88	-49	92	-50	96	-53	100	-57	104	-60	108	-63
CE301	79	112	-66	116	-69	120	-75	124	-85	128	-94	132	-97	136	-98
CE301	7A	140	-102	144	-105	148	-105	152	-107	156	-110	160	-113	164	-117
CE301	7B	168	-119	172	-118	176	-118	180	-123	184	-124	188	-124	192	-126
CE301	7C	196	-124	200	-126	204	-131	208	-134	212	-134				
CE301	81620615	3000	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	82	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	83	-56	42	-52	39	-48	37	-44	36	-40	37	-36	39	-32	41
CE301	84	-28	43	-24	44	-20	42	-16	38	-12	33	-8	29	-4	26
CE301	85	0	22	4	18	8	13	12	7	16	0	20	-5	24	-10
CE301	86	28	-15	32	-20	36	-24	40	-27	44	-29	48	-31	52	-32
CE301	87	56	-33	60	-35	64	-37	68	-40	72	-46	76	-59	80	-69
CE301	88	84	-71	88	-65	92	-57	96	-52	100	-49	104	-53	108	-58
CE301	89	112	-63	116	67	120	71	124	-75	128	-82	132	-92	136	-103
CE301	8A	140	-107	144	-109	148	-110	152	-110	156	-112	160	-115	164	-118
CE301	8B	168	-120	172	-123	176	-126	180	-127	184	-127	188	-131	192	-135
CE301	8C	196	-137	200	-138	204	-138	208	-139	212	-138				
CE301	91620615	4000	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	92	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	93	-56	42	-52	40	-48	38	-44	37	-40	38	-36	40	-32	41
CE301	94	-28	43	-24	44	-20	43	-16	40	-12	36	-8	33	-4	29
CE301	95	0	25	4	21	8	17	12	12	16	6	20	1	24	-4
CE301	96	28	-10	32	-16	36	-21	40	-25	44	-28	48	-29	52	-30
CE301	97	56	-32	60	-33	64	-36	68	-39	72	-42	76	-46	80	-56
CE301	98	84	-65	88	-65	92	-58	96	-53	100	-52	104	-53	108	-57
CE301	99	112	-61	116	-65	120	-69	124	-73	128	-77	132	-84	136	-98
CE301	9A	140	-109	144	-114	148	-118	152	-122	156	-125	160	-126	164	-129
CE301	9B	168	-133	172	-136	176	-136	180	-135	184	-136	188	-136	192	-136
CE301	9C	196	-136	200	-137	204	-140	208	-140	212	-140				
CE301	101620615	5000	79	-140			-100	57	-96	56	-92	54	-88	54
CE301	102	-84	54	-80	53	-76	52	-72	51	-68	49	-64	46	-60	44
CE301	103	-56	42	-52	39	-48	38	-44	38	-40	38	-36	40	-32	42
CE301	104	-28	44	-24	45	-20	45	-16	41	-12	37	-8	33	-4	30
CE301	105	0	27	4	23	8	19	12	13	16	8	20	2	24	-4
CE301	106	28	-10	32	-15	36	-20	40	-24	44	-28	48	-30	52	-32
CE301	107	56	-33	60	-35	64	-39	68	-43	72	-45	76	-45	80	-51
CE301	108	84	-60	88	-63	92	-59	96	-55	100	-53	104	-54	108	-57
CE301	109	112	-61	116	-65	120	-68	124	-72	128	-76	132	-81	136	-87
CE301	10A	140	-98	144	-111	148	-121	152	-129	156	-131	160	-131	164	-132
CE301	10B	168	-134	172	-135	176	-136	180	-137	184	-138	188	-138	192	-138
CE301	10C	196	-138	200	-138	204	-138	208	-140	212	-140				

(Continued)

Table C3 (Continued)

CASE 401																
CE401	11620522		0	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	12	-88	52	-84	50	-80	50	-76	48	-72	47	-68	45	-64	43	
CE401	13	-60	39	-56	37	-52	34	-48	32	-44	29	-40	26	-36	22	
CE401	14	-32	20	-28	17	-24	15	-20	12	-16	10	-12	7	-8	5	
CE401	15	-4	2	0	0	4	-3	8	-5	12	-9	16	-11	20	-13	
CE401	16	24	-15	28	-19	32	-21	36	-24	40	-26	44	-30	48	-33	
CE401	17	52	-35	56	-37	60	-40	64	-42	68	-45	72	-47	76	-50	
CE401	18	80	-52	84	-56	88	-58	92	-61	96	-63	100	-67	104	-69	
CE401	19	108	-72	112	-74	116	-77	120	-79	124	-82	128	-84	132	-87	
CE401	1A	136	-89	140	-93	144	-95	148	-99	152	-101	156	-104	160	-106	
CE401	1B	164	-110	168	-112	172	-115	176	-117	180	-121	184	-123	188	-126	
CE401	1C	192	-128	196	-131	200	-133	204	-135	208	-137	212	-140	216	-142	
CE401	21620522		100	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	22	-88	52	-84	50	-80	50	76	48	-72	46	-68	42	-64	40	
CE401	23	-60	37	-56	35	-52	32	-48	30	-44	26	-40	23	-36	20	
CE401	24	-32	18	-28	18	-24	14	-20	10	-16	4	-12	0	-8	-1	
CE401	25	-4	-3	0	-6	4	-9	8	-11	12	-15	16	-17	20	-17	
CE401	26	24	-22	28	-26	32	-27	36	-30	40	-33	44	-36	48	-38	
CE401	27	52	-37	56	-40	60	-50	64	-60	68	-67	72	-65	76	-52	
CE401	28	80	-42	84	-36	88	-38	92	-42	96	-57	100	-63	104	-68	
CE401	29	108	-69	112	-74	116	-79	120	-84	124	-88	128	-91	132	-94	
CE401	2A	136	-96	140	-99	144	-99	148	-102	152	-107	156	-106	160	-109	
CE401	2B	164	-113	168	-115	172	-118	176	-121	180	-124	184	-126	188	-129	
CE401	2C	192	-131	196	-133	200	-135	204	-136	208	-137	212	-140	216	-142	
CE401	31620522		300	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	32	-88	52	-84	50	-80	50	-76	48	-72	46	-68	42	-64	40	
CE401	33	-60	37	-56	35	-52	32	-48	30	-44	26	-40	24	-36	20	
CE401	34	-32	16	-28	14	-24	11	-20	5	-16	1	-12	-1	-8	-3	
CE401	35	-4	-6	0	-9	4	-12	8	-14	12	-18	16	-20	20	-19	
CE401	36	24	-22	28	-28	32	-31	36	-33	40	-32	44	-32	48	-36	
CE401	37	52	-41	56	-49	60	-52	64	-47	68	-41	72	-47	76	-60	
CE401	38	80	-69	84	-72	88	-61	92	-46	96	-41	100	-41	104	-44	
CE401	39	108	-52	112	-59	116	-74	120	-77	124	-86	128	-92	132	-92	
CE401	3A	136	-98	140	-101	144	-103	148	-105	152	-108	156	-113	160	-112	
CE401	3B	164	-114	168	-114	172	118	176	-122	180	-124	184	-126	188	-128	
CE401	3C	192	-129	196	-132	200	-134	204	-136	208	-137	212	-140	216	-142	
CE401	41620522		500	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	42	-88	52	-84	50	-80	50	-76	48	-72	46	-68	42	-64	40	
CE401	43	-60	37	-56	35	-52	32	-48	30	-44	26	-40	23	-36	17	
CE401	44	-32	15	-28	12	-24	7	-20	1	-16	0	-12	-3	-8	-4	
CE401	45	-4	-8	0	-11	4	-14	8	-15	12	-19	16	-21	20	-24	
CE401	46	24	-26	28	-30	32	-34	36	-36	40	-37	44	-37	48	-38	
CE401	47	52	-41	56	-47	60	-51	64	-55	68	-55	72	-49	76	-45	
CE401	48	80	-47	84	-61	88	-71	92	-76	96	-72	100	-58	104	-46	
CE401	49	108	-43	112	-46	116	-51	120	-57	124	-65	128	-79	132	-88	
CE401	4A	136	-94	140	-98	144	-102	148	-101	152	-108	156	-111	160	-114	
CE401	4B	164	-117	168	-119	172	-121	176	-122	180	-124	184	-126	188	-126	
CE401	4C	192	-129	196	-131	200	-131	204	-135	208	-137	212	-140	216	-142	

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Table C3 (Continued)

CE401	51620522	1000	81	-145			-104	52	-100	53	-96	52	-92	52
CE401	52	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	40
CE401	53	-60	37	-56	35	-52	32	-48	30	-44	26	-40	18	-36	15
CE401	54	-32	12	-28	5	-24	1	-20	0	-16	-2	-12	-5	-8	-7
CE401	55	-4	-11	0	-15	4	-19	8	-21	12	-24	16	-24	20	-28
CE401	56	24	-30	28	-31	32	-33	36	-36	40	-41	44	-45	48	-47
CE401	57	52	-49	56	-51	60	-54	64	-54	68	-55	72	-56	76	-59
CE401	58	80	-61	84	-59	88	-58	92	-61	96	-71	100	-80	104	-81
CE401	59	108	-60	112	-42	116	-44	120	-47	124	-51	128	-57	132	-63
CE401	5A	136	-71	140	-80	144	-96	148	-101	152	-100	156	-111	160	-114
CE401	5B	164	-117	168	-119	172	-122	176	-122	180	-124	184	-124	188	-126
CE401	5C	192	-128	196	-128	200	-130	204	-134	208	-137	212	-140	216	-142
CE401	61620522	1500	81	-145			-104	52	-100	53	-96	52	-92	52
CE401	62	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	40
CE401	63	-60	37	-56	35	-52	32	-48	29	-44	17	-40	14	-36	11
CE401	64	-32	5	-28	0	-24	-1	-20	-4	-16	-5	-12	-9	-8	-13
CE401	65	-4	-16	0	-16	4	-18	8	-22	12	-26	16	-29	20	-33
CE401	66	24	-35	28	-34	32	-34	36	-37	40	-40	44	-42	48	-45
CE401	67	52	-49	56	-52	60	-55	64	-55	68	-57	72	-59	76	-62
CE401	68	80	-62	84	-59	88	-61	92	-61	96	-70	100	-80	104	-82
CE401	69	108	-69	112	-47	116	-42	120	-45	124	-49	128	-54	132	-59
CE401	6A	136	-65	140	-73	144	-81	148	-95	152	-107	156	-107	160	-112
CE401	6B	164	-113	168	-114	172	-117	176	-119	180	-119	184	-120	188	-121
CE401	6C	192	-123	196	-125	200	-127	204	-131	208	-137	212	-140	216	-142
CE401	71620522	2000	81	-145			-104	52	-100	53	-96	52	-92	52
CE401	72	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	40
CE401	73	-60	37	-56	35	-52	32	-48	29	-44	14	-40	12	-36	8
CE401	74	-32	2	-28	-1	-24	-3	-20	-5	-16	-7	-12	-11	-8	-14
CE401	75	-4	-17	0	-19	4	-22	8	-24	12	-27	16	-31	20	-33
CE401	76	24	-31	28	-33	32	-35	36	-37	40	-40	44	-44	48	-47
CE401	77	52	-53	56	-56	60	-59	64	-60	68	-61	72	-61	76	-62
CE401	78	80	-62	84	-62	88	-58	92	-64	96	-67	100	-77	104	-82
CE401	79	108	-72	112	-51	116	-42	120	-43	124	-47	128	-52	132	-57
CE401	7A	136	-63	140	-72	144	-86	148	-97	152	-97	156	-101	160	-107
CE401	7B	164	-110	168	-111	172	-114	176	-116	180	-118	184	-118	188	-118
CE401	7C	192	-121	196	-125	200	-127	204	-130	208	-137	212	-140	216	-142
CE401	81620522	3000	81	-145			-104	52	-100	53	-96	52	-92	52
CE401	82	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	40
CE401	83	-60	38	-56	35	-52	24	-48	15	-44	12	-40	7	-36	1
CE401	84	-32	-1	-28	-4	-24	-6	-20	-8	-16	-13	-12	-17	-8	-19
CE401	85	-4	-21	0	-23	4	-21	8	26	12	-23	16	-23	20	-27
CE401	86	24	-30	28	-27	32	-41	36	-45	40	-49	44	-53	48	-56
CE401	87	52	-59	56	-59	60	-60	64	-60	68	-61	72	-63	76	-62
CE401	88	80	-64	84	-62	88	-59	92	-61	96	-65	100	-75	104	-78
CE401	89	108	-72	112	-52	116	-41	120	-40	124	-44	128	-49	132	-55
CE401	8A	136	-62	140	-77	144	-85	148	-82	152	-91	156	-97	160	-98
CE401	8B	164	-103	168	-106	172	-110	176	-112	180	-114	184	-115	188	-118
CE401	8C	192	-119	196	-123	200	-125	204	-126	208	-129	212	-140	216	-142

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Table C3 (Continued)

CE401	91620522	4000	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	92	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	40
CE401	93	-60	38	-56	35	-52	17	-48	14	-44	11	-40	6	-36	0
CE401	94	-32	-2	-28	-4	-24	-5	-20	-9	-16	-14	-12	-20	-8	-24
CE401	95	-4	-27	0	-28	4	-28	8	-26	12	-18	16	-21	20	-27
CE401	96	24	-35	28	-40	32	-45	36	-49	40	-53	44	-58	48	-61
CE401	97	52	-63	56	-62	60	-64	64	-62	68	-62	72	-61	76	-65
CE401	98	80	-69	84	-64	88	-58	92	-52	96	-58	100	-66	104	-74
CE401	99	108	-71	112	-73	116	-43	120	-39	124	-43	128	-48	132	-54
CE401	9A	136	-62	140	-79	144	-82	148	-83	152	-87	156	-91	160	-96
CE401	9B	164	-99	168	-102	172	-109	176	-112	180	-114	184	-116	188	-117
CE401	9C	192	-120	196	-123	200	-125	204	-126	208	-129	212	-140	216	-142
CE401	101620522	5000	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	102	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	40
CE401	103	-60	37	-56	19	-52	16	-48	14	-44	11	-40	4	-36	-1
CE401	104	-32	-3	-28	-3	-24	-6	-20	-11	-16	-16	-12	-21	-8	-23
CE401	105	-4	-24	0	-23	4	-20	8	-16	12	-23	16	-29	20	-33
CE401	106	24	-39	28	-44	32	-48	36	-52	40	-56	44	-60	48	-63
CE401	107	52	-66	56	-66	60	-69	64	-69	68	-67	72	-66	76	-67
CE401	108	80	-67	84	-67	88	-62	92	-54	96	-55	100	-59	104	-69
CE401	109	108	-74	112	-70	116	-50	120	-39	124	-38	128	-42	132	-47
CE401	10A	136	-54	140	-71	144	-74	148	-78	152	-85	156	-87	160	-94
CE401	10B	164	-97	168	-99	172	-103	176	-106	180	-113	184	-114	188	-114
CE401	10C	192	-120	196	-120	200	-122	204	-122	208	-129	212	-140	216	-142
CE401	111620522	6000	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	112	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	41
CE401	113	-60	37	-56	18	-52	15	-48	14	-44	10	-40	4	-36	0
CE401	114	-32	-1	-28	-7	-24	-10	-20	-13	-16	-15	-12	-16	-8	-16
CE401	115	-4	-16	0	-17	4	-15	8	-21	12	-26	16	-27	20	-38
CE401	116	24	-38	28	-47	32	-51	36	-55	40	-58	44	-63	48	-66
CE401	117	52	-68	56	-70	60	-73	64	-70	68	-70	72	-68	76	-69
CE401	118	80	-69	84	-69	88	-68	92	-59	96	-55	100	-56	104	-66
CE401	119	108	-73	112	-72	116	-54	120	-43	124	-38	128	-39	132	-52
CE401	11A	136	-51	140	-59	144	-71	148	-78	152	-80	156	-82	160	-89
CE401	11B	164	-93	168	-96	172	-98	176	-102	180	-109	184	-113	188	-114
CE401	11C	192	-116	196	-120	200	-120	204	-123	208	-129	212	-140	216	-142
CE401	121620522	6600	81	-145			-104	52	-100	53	-96	52	-92	52	
CE401	122	-88	52	-84	50	-80	50	-76	47	-72	45	-68	42	-64	41
CE401	123	-60	37	-56	17	-52	15	-48	12	-44	7	-40	0	-36	-4
CE401	124	-32	-5	-28	-6	-24	-4	-20	-7	-16	-9	-12	-12	-8	-12
CE401	125	-4	-16	0	-14	4	-20	8	-26	12	-31	16	-36	20	-41
CE401	126	24	-45	28	-49	32	-52	36	-56	40	-61	44	-65	48	-67
CE401	127	52	-70	56	-71	60	-69	64	-70	68	-70	72	-69	76	-69
CE401	128	80	-70	84	-69	88	-65	92	-59	96	-52	100	-55	104	-66
CE401	129	108	-73	112	-70	116	-52	120	-43	124	-38	128	-41	132	-46
CE401	12A	136	-52	140	-60	144	-72	148	-78	152	-81	156	-89	160	-89
CE401	12B	164	-91	168	-93	172	-95	176	-105	180	-110	184	-112	188	-114
CE401	12C	192	-118	196	-119	200	-121	204	-121	208	-129	212	-140	216	-142

(Continued)

Table C3 (Continued)

CASE 501

CE501	11620719	0	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	12	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	13	-44	34	-40	31	-36	27	-32	25	-28	21	-24	19	-20	15
CE501	14	-16	13	-12	9	-8	7	-4	3	0	0	4	-2	8	-4
CE501	15	12	-7	16	-9	20	-13	24	-15	28	-17	32	-19	36	-22
CE501	16	40	-24	44	-28	48	-30	52	-33	56	-35	60	-39	64	-41
CE501	17	68	-43	72	-45	76	-49	80	-51	84	-53	88	-55	92	-59
CE501	18	96	-61	100	-63	104	-65	108	-68	112	-70	116	-74	120	-77
CE501	19	124	-80	128	-82	132	-85	136	-87	140	-90	144	-93	148	-97
CE501	1A	152	-99	156	-103	160	-105	164	-106	168	-111	172	-115	176	-117
CE501	1B	180	-120	184	-122	188	-125	192	-127	196	-129	200	-131	204	-134
CE501	1C	208	-136	212	-139	216	-140	220	-141	224	-143				
CE501	21620719	100	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	22	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	23	-44	34	-40	32	-36	28	-32	25	-28	21	-24	19	-20	15
CE501	24	-16	13	-12	9	-8	6	-4	2	0	0	4	-3	8	-5
CE501	25	12	-8	16	-10	20	-13	24	-15	28	-19	32	-21	36	-24
CE501	26	40	-26	44	-30	48	-32	52	-35	56	-37	60	-41	64	-43
CE501	27	68	-46	72	-48	76	-53	80	-61	84	-58	88	-41	92	-40
CE501	28	96	-43	100	-52	104	-56	108	-64	112	-67	116	-70	120	-75
CE501	29	124	-79	128	-81	132	-84	136	-87	140	-90	144	-92	148	-96
CE501	2A	152	-98	156	-102	160	-105	164	-108	168	-110	172	-114	176	-117
CE501	2B	180	-118	184	-121	188	-124	192	-126	196	-128	200	-129	204	-133
CE501	2C	208	-135	212	-137	216	-139	220	-140	224	-143				
CE501	31620719	300	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	32	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	33	-44	34	-40	32	-36	28	-32	25	-28	21	-24	18	-20	14
CE501	34	-16	11	-12	7	-8	4	-4	1	0	0	4	-4	8	-6
CE501	35	12	-9	16	-11	20	-15	24	-17	28	-21	32	-24	36	-27
CE501	36	40	-29	44	-33	48	-37	52	-40	56	-42	60	-45	64	-46
CE501	37	68	-49	72	-51	76	-55	80	-62	84	-66	88	-59	92	-41
CE501	38	96	-33	100	-34	104	-39	108	-46	112	-56	116	-67	120	-73
CE501	39	124	-79	128	-81	132	-85	136	-88	140	-91	144	-94	148	-97
CE501	3A	152	-99	156	-103	160	-105	164	-109	168	-111	172	-114	176	-117
CE501	3B	180	-120	184	-123	188	-123	192	-126	196	-128	200	-129	204	-132
CE501	3C	208	-133	212	-135	216	-138	220	-139	224	-141				
CE501	41620719	500	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	42	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	43	-44	34	-40	32	-36	28	-32	25	-28	21	-24	18	-20	15
CE501	44	-16	11	-12	7	-8	3	-4	0	0	-1	4	-4	8	-6
CE501	45	12	-6	16	-10	20	-14	24	-18	28	-22	32	-24	36	-28
CE501	46	40	-30	44	-34	48	-36	52	-40	56	-44	60	-47	64	-48
CE501	47	68	-51	72	-53	76	-55	80	-56	84	-57	88	-60	92	-64
CE501	48	96	-70	100	-73	104	-62	108	-43	112	-36	116	-38	120	-44
CE501	49	124	-52	128	-63	132	-74	136	-82	140	-88	144	-94	148	-97
CE501	4A	152	-99	156	-103	160	-106	164	-110	168	-113	172	-115	176	-117
CE501	4B	180	-120	184	-122	188	-124	192	-125	196	-128	200	-129	204	-131
CE501	4C	208	-133	212	-136	216	-137	220	-140	224	-142				

(Continued)

(Sheet 1 of 2)

Table C3 (Continued)

CE501	51620719	1000	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	52	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	53	-44	34	-40	32	-36	28	-32	25	-28	21	-24	18	-20	14
CE501	54	-16	11	-12	5	-8	3	-4	0	0	-2	4	-6	8	-8
CE501	55	12	-10	16	-10	20	-13	24	-16	28	-22	32	-24	36	-28
CE501	56	40	-31	44	-35	48	-40	52	-46	56	-51	60	-54	64	-56
CE501	57	68	-59	72	-58	76	-58	80	-59	84	-59	88	-62	92	-66
CE501	58	96	-69	100	-73	104	-75	108	-69	112	-49	116	-37	120	-35
CE501	59	124	-39	128	-45	132	-53	136	-64	140	-77	144	-85	148	-90
CE501	5A	152	-96	156	-100	160	-105	164	-111	168	-114	172	-117	176	-119
CE501	5B	180	-120	184	-123	188	-125	192	-125	196	-127	200	-129	204	-131
CE501	5C	208	-133	212	-135	216	-137	220	-139	224	-143				
CE501	61620719	1500	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	62	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	63	-44	34	-40	32	-36	28	-32	25	-28	23	-24	18	-20	13
CE501	64	-16	9	-12	4	-8	0	-4	-1	0	-3	4	-6	8	-8
CE501	65	12	-12	16	-15	20	-10	24	-16	28	-21	32	-24	36	-28
CE501	66	40	-33	44	-37	48	-42	52	-48	56	-52	60	-57	64	-59
CE501	67	68	-62	72	-64	76	-64	80	-62	84	-61	88	-63	92	-65
CE501	68	96	-69	100	-73	104	-75	108	-74	112	-72	116	-60	120	-42
CE501	69	124	-36	128	-38	132	-43	136	-51	140	-61	144	-72	148	-84
CE501	6A	152	-92	156	-98	160	-102	164	-107	168	-111	172	-115	176	-118
CE501	6B	180	-120	184	-122	188	-125	192	-127	196	-128	200	-130	204	-131
CE501	6C	208	-133	212	-135	216	-137	220	-139	224	-140				
CE501	71620719	2000	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	72	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	73	-44	34	-40	32	-36	28	-32	25	-28	21	-24	18	-20	13
CE501	74	-16	8	-12	2	-8	-1	-4	-3	0	-5	4	-4	8	-7
CE501	75	12	-11	16	-13	20	-12	24	-15	28	-19	32	-22	36	-26
CE501	76	40	-32	44	-37	48	-43	52	-48	56	-55	60	-61	64	-63
CE501	77	68	-65	72	-66	76	-65	80	-65	84	-64	88	-64	92	-65
CE501	78	96	-67	100	-71	104	-73	108	-74	112	-74	116	-70	120	-50
CE501	79	124	-39	128	-37	132	-40	136	-46	140	-55	144	-66	148	-80
CE501	7A	152	-86	156	-92	160	-98	164	-104	168	-107	172	-114	176	-117
CE501	7B	180	-120	184	-122	188	-125	192	-127	196	-128	200	-129	204	-131
CE501	7C	208	-132	212	-135	216	-136	220	-139	224	-142				
CE501	81620719	3000	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	82	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	83	-44	34	-40	32	-36	28	-32	25	-28	21	-24	18	-20	9
CE501	84	-16	4	-12	0	-8	-2	-4	-3	0	-5	4	-7	8	-9
CE501	85	12	-11	16	-13	20	-14	24	-18	28	-21	32	-23	36	-27
CE501	86	40	-31	44	-35	48	-39	52	-43	56	-55	60	-65	64	-71
CE501	87	68	-73	72	-74	76	-73	80	-73	84	-70	88	-67	92	-67
CE501	88	96	-69	100	-68	104	-69	108	-71	112	-73	116	-73	120	-73
CE501	89	124	-69	128	-53	132	-39	136	-38	140	-42	144	-50	148	-59
CE501	8A	152	-72	156	-83	160	-87	164	-97	168	-103	172	-108	176	-113
CE501	8B	180	-117	184	-120	188	-124	192	-126	196	-127	200	-129	204	-131
CE501	8C	208	-132	212	-135	216	-135	220	-138	224	-140				

(Continued)

Table C3 (Continued)

CE501	91620719	4000	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	92	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	93	-44	34	-40	32	-36	28	-32	24	-28	19	-24	10	-20	5
CE501	94	-16	2	-12	0	-8	-1	-4	-4	0	-5	4	-9	8	-11
CE501	95	12	-13	16	-20	20	-15	24	-16	28	-24	32	-29	36	-32
CE501	96	40	-35	44	-39	48	-41	52	-45	56	-48	60	-51	64	-56
CE501	97	68	-66	72	-74	76	-77	80	-78	84	-79	88	-79	92	-78
CE501	98	96	-77	100	-75	104	-75	108	-77	112	-78	116	-79	120	-80
CE501	99	124	-82	128	-83	132	-73	136	-61	140	-44	144	-43	148	-46
CE501	9A	152	-50	156	-56	160	-64	164	-73	168	-83	172	-96	176	-106
CE501	9B	180	-114	184	-116	188	-118	192	-121	196	-123	200	-125	204	-128
CE501	9C	208	-130	212	-133	216	-134	220	-136	224	-139				
CE501	101620719	5000	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	102	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	103	-44	34	-40	32	-36	28	-32	24	-28	12	-24	8	-20	3
CE501	104	-16	0	-12	-1	-8	-3	-4	-6	0	-8	4	-11	8	-14
CE501	105	12	-19	16	-14	20	-17	24	-25	28	-30	32	-32	36	-34
CE501	106	40	-36	44	-40	48	-42	52	-43	56	-44	60	-48	64	-51
CE501	107	68	-56	72	-63	76	-75	80	-80	84	-82	88	-83	92	-84
CE501	108	96	-84	100	-83	104	-82	108	-83	112	-82	116	-83	120	-83
CE501	109	124	-85	128	-84	132	-82	136	-74	140	-56	144	-41	148	-42
CE501	10A	152	-45	156	-50	160	-56	164	-65	168	-75	172	-86	176	-94
CE501	10B	180	-101	184	-106	188	-111	192	-116	196	-120	200	-122	204	-125
CE501	10C	208	-127	212	-130	216	-132	220	-135	224	-137				
CE501	111620719	6000	79	-150			-88	50	-84	50	-80	50	-76	50
CE501	112	-72	50	-68	50	-64	49	-60	45	-56	43	-52	40	-48	38
CE501	113	-44	34	-40	32	-36	28	-32	25	-28	10	-24	5	-20	1
CE501	114	-16	0	-12	-3	-8	-5	-4	-8	0	-10	4	-13	8	-20
CE501	115	12	-16	16	-16	20	-23	24	-28	28	-32	32	-34	36	-37
CE501	116	40	-39	44	-40	48	-42	52	-44	56	-46	60	-49	64	-52
CE501	117	68	-56	72	-61	76	-69	80	-77	84	-83	88	-86	92	-86
CE501	118	96	-86	100	-86	104	-86	108	-86	112	-88	116	-89	120	-89
CE501	119	124	-89	128	-88	132	-82	136	-66	140	-46	144	-41	148	-43
CE501	11A	152	-46	156	-51	160	-58	164	-67	168	-76	172	-84	176	-91
CE501	11B	180	-98	184	-102	188	-105	192	-111	196	-117	200	-119	204	-123
CE501	11C	208	-125	212	-128	216	-130	220	-133	224	-136				
CASE 701															
CE701	11620709	0	79	-125			-128	75	-124	75	-120	75	-116	75
CE701	12	-112	75	-108	75	-104	75	-100	68	-96	60	-92	57	-88	53
CE701	13	-84	51	-80	50	-76	48	-72	46	-68	44	-64	41	-60	38
CE701	14	-56	36	-52	33	-48	30	-44	28	-40	24	-36	21	-32	19
CE701	15	-28	16	-24	14	-20	11	-16	9	-12	7	-8	5	-4	2
CE701	16	0	0	4	-2	8	-5	12	-8	16	-11	20	-14	24	-17
CE701	17	28	-20	32	-22	36	-25	40	-28	44	-31	48	-34	52	-36
CE701	18	56	-39	60	-42	64	-45	68	-48	72	-51	76	-53	80	-56
CE701	19	84	-59	88	-62	92	-65	96	-67	100	-69	104	-72	108	-75
CE701	1A	112	-78	116	-80	120	-83	124	-85	128	-88	132	-91	136	-94
CE701	1B	140	-97	144	-99	148	-102	152	-105	156	-107	160	-109	164	-112
CE701	1C	168	-114	172	-116	176	-118	180	-120	184	-121				

(Continued)

Table C3 (Continued)

CE701	21620709	100	79	-125			-128	75	-124	75	-120	75	-116	75
CE701	22	-112	75	-108	75	-104	75	-100	68	-96	61	-92	59	-88	56
CE701	23	-84	53	-80	51	-76	49	-72	47	-68	46	-64	43	-60	42
CE701	24	-56	41	-52	39	-48	39	-44	41	-40	47	-36	49	-32	45
CE701	25	-28	39	-24	33	-20	27	-16	20	-12	14	-8	7	-4	1
CE701	26	0	-3	4	-8	8	-12	12	-16	16	-20	20	-26	24	-30
CE701	27	28	-32	32	-36	36	-39	40	-41	44	-43	48	-44	52	-44
CE701	28	56	-45	60	-46	64	-46	68	-46	72	-47	76	-48	80	-49
CE701	29	84	-51	88	-54	92	-56	96	-59	100	-61	104	-65	108	-68
CE701	2A	112	-71	116	-70	120	-73	124	-80	128	-82	132	-87	136	-92
CE701	2B	140	-94	144	-98	148	-102	152	-105	156	-109	160	-115	164	-120
CE701	2C	168	-122	172	-124	176	-125	180	-120	184	-120				
CE701	31620709	142	79	-125			-128	75	-124	75	-120	75	-116	75
CE701	32	-112	75	-108	75	-104	75	-100	69	-96	63	-92	60	-88	57
CE701	33	-84	54	-80	52	-76	50	-72	48	-68	47	-64	45	-60	44
CE701	34	-56	44	-52	45	-48	46	-44	50	-40	50	-36	46	-32	40
CE701	35	-28	34	-24	27	-20	21	-16	14	-12	7	-8	1	-4	-2
CE701	36	0	-8	4	-14	8	-19	12	-23	16	-26	20	-28	24	-30
CE701	37	28	-33	32	-35	36	-37	40	-39	44	-40	48	-41	52	-41
CE701	38	56	-42	60	-42	64	-43	68	-44	72	-45	76	-46	80	-47
CE701	39	84	-48	88	-50	92	-54	96	-57	100	-61	104	-66	108	-70
CE701	3A	112	-73	116	-77	120	-80	124	-83	128	-87	132	-90	136	-93
CE701	3B	140	-96	144	-99	148	-103	152	-108	156	-110	160	-111	164	-118
CE701	3C	168	-122	172	-122	176	-123	180	-121	184	-120				
CE701	41620709	300	79	-125			-128	75	-124	75	-120	75	-116	75
CE701	42	-112	75	-108	75	-104	75	-100	70	-96	64	-92	62	-88	60
CE701	43	-84	58	-80	56	-76	55	-72	54	-68	54	-64	53	-60	51
CE701	44	-56	50	-52	47	-48	44	-44	40	-40	37	-36	33	-32	28
CE701	45	-28	24	-24	19	-20	13	-16	8	-12	3	-8	-1	-4	-6
CE701	46	0	-11	4	-15	8	-19	12	-21	16	-23	20	-26	24	-28
CE701	47	28	-30	32	-31	36	-31	40	-31	44	-31	48	-31	52	-31
CE701	48	56	-32	60	-35	64	-37	68	-38	72	-40	76	-42	80	-45
CE701	49	84	-49	88	-59	92	-66	96	-64	100	-65	104	-69	108	-70
CE701	4A	112	-74	116	-80	120	-84	124	-85	128	-90	132	-96	136	-97
CE701	4B	140	-102	144	-104	148	-105	152	-108	156	-115	160	-119	164	-118
CE701	4C	168	-120	172	-122	176	-123	180	-124	184	-124				
CE701	51620709	425	79	-125			-128	75	-124	75	-120	75	-116	75
CE701	52	-112	75	-108	75	-104	75	-100	70	-96	64	-92	62	-88	60
CE701	53	-84	58	-80	57	-76	55	-72	54	-68	53	-64	52	-60	51
CE701	54	-56	49	-52	46	-48	42	-44	40	-40	37	-36	33	-32	29
CE701	55	-28	25	-24	22	-20	18	-16	14	-12	9	-8	5	-4	1
CE701	56	0	-2	4	-7	8	-11	12	-14	16	-17	20	-19	24	-21
CE701	57	28	-22	32	-24	36	-25	40	-28	44	-32	48	-35	52	-37
CE701	58	56	-39	60	-41	64	-43	68	-45	72	-49	76	-52	80	-55
CE701	59	84	-57	88	-59	92	-60	96	-63	100	-73	104	-76	108	-75
CE701	5A	112	-83	116	-88	120	-89	124	-94	128	-98	132	-99	136	-100
CE701	5B	140	-102	144	-105	148	-110	152	-115	156	-116	160	-118	164	-119
CE701	5C	168	-121	172	-123	176	-124	180	-124	184	-125				

(Continued)

Table C3 (Continued)

CE701	61620709	500	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	62	-112	75	-108	75	-104	75	-100	70	-96	65	-92	63	-88	61
CE701	63	-84	60	-80	58	-76	57	-72	56	-68	56	-64	56	-60	55
CE701	64	-56	54	-52	53	-48	52	-44	50	-40	46	-36	42	-32	37
CE701	65	-28	32	-24	27	-20	21	-16	14	-12	8	-8	3	-4	-1
CE701	66	0	-7	4	-12	8	-17	12	-21	16	-24	20	-27	24	-29
CE701	67	28	-30	32	-32	36	-34	40	-35	44	-35	48	-36	52	-37
CE701	68	56	-38	60	-40	64	-42	68	-43	72	-46	76	-48	80	-49
CE701	69	84	-53	88	-56	92	-60	96	-63	100	-65	104	-68	108	-71
CE701	6A	112	-75	116	-82	120	-90	124	-98	128	-102	132	-100	136	-103
CE701	6B	140	-110	144	-110	148	-110	152	-112	156	-118	160	-121	164	-120
CE701	6C	168	-122	172	-123	176	-124	180	-125	184	-123				
CE701	71620709	707	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	72	-112	75	-108	75	-104	75	-100	71	-96	67	-92	66	-88	65
CE701	73	-84	64	-80	64	-76	63	-72	62	-68	61	-64	59	-60	56
CE701	74	-56	53	-52	50	-48	47	-44	44	-40	41	-36	37	-32	33
CE701	75	-28	29	-24	23	-20	18	-16	13	-12	8	-8	3	-4	-1
CE701	76	0	-5	4	-10	8	-15	12	-20	16	-23	20	-25	24	-27
CE701	77	28	-29	32	-31	36	-33	40	-33	44	-34	48	-34	52	-35
CE701	78	56	-37	60	-39	64	-41	68	-43	72	-45	76	-47	80	-50
CE701	79	84	-54	88	-58	92	-61	96	-64	100	-66	104	-68	108	-71
CE701	7A	112	-74	116	-83	120	-96	124	-98	128	-99	132	-102	136	-109
CE701	7B	140	-111	144	-112	148	-118	152	-122	156	-123	160	-124	164	-124
CE701	7C	168	-123	172	-124	176	-123	180	-123	184	-121				
CE701	81620709	1000	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	82	-112	75	-108	75	-104	72	-100	69	-96	67	-92	67	-88	66
CE701	83	-84	64	-80	64	-76	64	-72	63	-68	62	-64	60	-60	58
CE701	84	-56	55	-52	52	-48	49	-44	46	-40	44	-36	40	-32	35
CE701	85	-28	30	-24	26	-20	21	-16	16	-12	10	-8	5	-4	0
CE701	86	0	-3	4	-8	8	-13	12	-17	16	-21	20	-23	24	-26
CE701	87	28	-28	32	-30	36	-32	40	-34	44	-35	48	-36	52	-37
CE701	88	56	-39	60	-41	64	-43	68	-45	72	-48	76	-50	80	-51
CE701	89	84	-54	88	-58	92	-61	96	-65	100	-67	104	-68	108	-70
CE701	8A	112	-73	116	-80	120	-91	124	-106	128	-118	132	-118	136	-118
CE701	8B	140	-118	144	-117	148	-116	152	-114	156	-114	160	-119	164	-121
CE701	8C	168	-121	172	-121	176	-121	180	-123	184	-123				
CE701	91620709	1273	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	92	-112	75	-108	75	-104	72	-100	70	-96	68	-92	66	-88	65
CE701	93	-84	65	-80	65	-76	65	-72	65	-68	64	-64	63	-60	61
CE701	94	-56	58	-52	55	-48	52	-44	49	-40	45	-36	41	-32	37
CE701	95	-28	32	-24	27	-20	21	-16	16	-12	11	-8	5	-4	1
CE701	96	0	-2	4	-7	8	-12	12	-17	16	-21	20	-23	24	-26
CE701	97	28	-29	32	-31	36	-33	40	-35	44	-36	48	-37	52	-39
CE701	98	56	-41	60	-43	64	-44	68	-46	72	-49	76	-51	80	-53
CE701	99	84	-56	88	-60	92	-63	96	-65	100	-67	104	-69	108	-72
CE701	9A	112	-75	116	-79	120	-88	124	-103	128	-115	132	-117	136	-116
CE701	9B	140	-117	144	-117	148	-116	152	-116	156	-117	160	-119	164	-120
CE701	9C	168	-121	172	-121	176	-121	180	-123	184	-124				

(Continued)

(Sheet 16 of 27)

Table C3 (Continued)

CE701	101620709	1500	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	102	-112	75	-108	75	-104	72	-100	70	-96	68	-92	66	-88	65
CE701	103	-84	65	-80	65	-76	66	-72	66	-68	65	-64	64	-60	63
CE701	104	-56	60	-52	57	-48	54	-44	50	-40	46	-36	42	-32	38
CE701	105	-28	33	-24	28	-20	22	-16	17	-12	11	-8	6	-4	1
CE701	106	0	-3	4	-7	8	-11	12	-16	16	-21	20	-24	24	-26
CE701	107	28	-29	32	-31	36	-33	40	-35	44	-37	48	-39	52	-41
CE701	108	56	-43	60	-44	64	-46	68	-47	72	-50	76	-52	80	-54
CE701	109	84	-57	88	-61	92	-64	96	-66	100	-68	104	-70	108	-73
CE701	10A	112	-75	116	-79	120	-86	124	-98	128	-111	132	-116	136	-114
CE701	10B	140	-112	144	-114	148	-116	152	-117	156	-118	160	-120	164	-121
CE701	10C	168	-122	172	-122	176	-123	180	-124	184	-124				
CE701	111620709	2000	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	112	-112	75	-108	75	-104	72	-100	70	-96	68	-92	66	-88	66
CE701	113	-84	66	-80	68	-76	69	-72	69	-68	68	-64	67	-60	65
CE701	114	-56	61	-52	58	-48	55	-44	52	-40	48	-36	43	-32	39
CE701	115	-28	34	-24	29	-20	24	-16	19	-12	13	-8	7	-4	2
CE701	116	0	-2	4	-7	8	-12	12	-16	16	-21	20	-26	24	-28
CE701	117	28	-30	32	-32	36	-34	40	-36	44	-38	48	-40	52	-42
CE701	118	56	-45	60	-47	64	-49	68	-51	72	-52	76	-54	80	-55
CE701	119	84	-58	88	-62	92	-65	96	-67	100	-69	104	-71	108	-73
CE701	11A	112	-76	116	-80	120	-84	124	-93	128	-107	132	-119	136	-116
CE701	11B	140	-113	144	-116	148	-119	152	-121	156	-121	160	-121	164	-120
CE701	11C	168	-121	172	-123	176	-125	180	-124	184	-124				
CE701	121620709	2758	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	122	-112	75	-108	75	-104	72	-100	70	-96	68	-92	66	-88	66
CE701	123	-84	67	-80	67	-76	69	-72	72	-68	73	-64	73	-60	72
CE701	124	-56	70	-52	68	-48	64	-44	60	-40	56	-36	52	-32	48
CE701	125	-28	43	-24	37	-20	32	-16	27	-12	21	-8	15	-4	9
CE701	126	0	2	4	-2	8	-7	12	-12	16	-18	20	-24	24	-29
CE701	127	28	-34	32	-39	36	-43	40	-46	44	-49	48	-52	52	-54
CE701	128	56	-55	60	-57	64	-59	68	-60	72	-61	76	-64	80	-70
CE701	129	84	-77	88	-78	92	-84	96	-81	100	-71	104	-71	108	-74
CE701	12A	112	-77	116	-79	120	-82	124	-85	128	-90	132	-100	136	-113
CE701	12B	140	-118	144	-120	148	-122	152	-123	156	-123	160	-122	164	-121
CE701	12C	168	-123	172	-124	176	-124	180	-124	184	-125				
CE701	131620709	3000	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	132	-112	75	-108	75	-104	73	-100	70	-96	68	-92	66	-88	66
CE701	133	-84	67	-80	71	-76	74	-72	76	-68	77	-64	78	-60	77
CE701	134	-56	73	-52	69	-48	65	-44	61	-40	57	-36	53	-32	48
CE701	135	-28	42	-24	37	-20	31	-16	25	-12	20	-8	14	-4	7
CE701	136	0	3	4	2	8	-4	12	-13	16	-18	20	-24	24	-29
CE701	137	28	-35	32	-40	36	-44	40	-47	44	-50	48	-53	52	-55
CE701	138	56	-57	60	-59	64	-60	68	-61	72	-62	76	-65	80	-71
CE701	139	84	-78	88	-78	92	-74	96	-71	100	-71	104	-73	108	-75
CE701	13A	112	-78	116	-80	120	-82	124	-86	128	-91	132	-99	136	-109
CE701	13B	140	-117	144	-122	148	-124	152	-123	156	-121	160	-120	164	-122
CE701	13C	168	-123	172	-123	176	-124	180	-125	184	-125				

(Continued)

Table C3 (Continued)

CE701	141620709	3323	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	142	-112	75	-108	75	-104	73	-100	70	-96	68	-92	66	-88	67
CE701	143	-84	71	-80	75	-76	77	-72	78	-68	79	-64	80	-60	80
CE701	144	-56	79	-52	75	-48	71	-44	65	-40	58	-36	54	-32	48
CE701	145	-28	43	-24	37	-20	31	-16	25	-12	19	-8	12	-4	5
CE701	146	0	0	4	-5	8	-11	12	-16	16	-22	20	-27	24	-32
CE701	147	28	-38	32	-42	36	-46	40	-50	44	-53	48	-56	52	-58
CE701	148	56	-60	60	-61	64	-61	68	-62	72	-64	76	-68	80	-74
CE701	149	84	-77	88	-76	92	-73	96	-71	100	-72	104	-74	108	-76
CE701	14A	112	-79	116	-81	120	-84	124	-88	128	-93	132	-101	136	-109
CE701	14B	140	-117	144	-123	148	-124	152	-124	156	-122	160	-121	164	-123
CE701	14C	168	-124	172	-124	176	-124	180	-125	184	-125				
CE701	151620709	4000	79	-125			-128	75	-124	75	-120	75	-116	75	
CE701	152	-112	75	-108	75	-104	74	-100	74	-96	74	-92	73	-88	72
CE701	153	-84	74	-80	77	-76	80	-72	83	-68	85	-64	82	-60	78
CE701	154	-56	74	-52	69	-48	65	-44	60	-40	56	-36	52	-32	48
CE701	155	-28	42	-24	37	-20	32	-16	26	-12	20	-8	13	-4	6
CE701	156	0	1	4	-3	8	-9	12	-14	16	-20	20	-26	24	-32
CE701	157	28	-38	32	-43	36	-46	40	-49	44	-52	48	-55	52	-58
CE701	158	56	-60	60	-61	64	-62	68	-63	72	-65	76	-69	80	-75
CE701	159	84	-76	88	-74	92	-71	96	-71	100	-72	104	-75	108	-78
CE701	15A	112	-81	116	-83	120	-86	124	-90	128	-94	132	-101	136	-108
CE701	15B	140	-116	144	-123	148	-124	152	-123	156	-121	160	-121	164	-123
CE701	15C	168	-124	172	-124	176	-124	180	-125	184	-125				
CASE 801															
CE801	11620727	0	80	-150			-88	50	-84	50	-80	50	-76	50	
CE801	12	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50
CE801	13	-44	50	-40	50	-36	49	-32	24	-28	21	-24	18	-20	14
CE801	14	-16	12	-12	9	-8	6	-4	3	0	0	4	-4	8	-8
CE801	15	12	-8	16	-11	20	-12	24	-16	28	-21	32	-21	36	-24
CE801	16	40	-26	44	-29	48	-31	52	-33	56	-36	60	-39	64	-42
CE801	17	68	-44	72	-47	76	-49	80	-52	84	-55	88	-58	92	-60
CE801	18	96	-63	100	-66	104	-68	108	-71	112	-74	116	-76	120	-79
CE801	19	124	-83	128	-86	132	-90	136	-94	140	-96	144	-98	148	-100
CE801	1A	152	-101	156	-103	160	-105	164	-106	168	-108	172	-110	176	-112
CE801	1B	180	-114	184	-115	188	-118	192	-120	196	-122	200	-125	204	-128
CE801	1C	208	-131	212	-134	216	-136	220	-140	224	-141	228	-141		
CE801	21620727	100	80	-150			-88	50	-84	50	-80	50	-76	50	
CE801	22	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50
CE801	23	-44	50	-40	50	-36	49	-32	25	-28	21	-24	18	-20	15
CE801	24	-16	12	-12	10	-8	8	-4	6	0	2	4	-2	8	-5
CE801	25	12	-7	16	-10	20	-14	24	-15	28	-18	32	-18	36	-26
CE801	26	40	-32	44	-21	48	-17	52	-26	56	-30	60	-36	64	-41
CE801	27	68	-45	72	-46	76	-48	80	-51	84	-53	88	-56	92	-60
CE801	28	96	-63	100	-66	104	-66	108	-69	112	-73	116	-76	120	-79
CE801	29	124	-82	128	-85	132	-89	136	-92	140	-95	144	-97	148	-97
CE801	2A	152	-101	156	-102	160	-104	164	-104	168	-107	172	-109	176	-111
CE801	2B	180	-113	184	-115	188	-117	192	-119	196	-122	200	-124	204	-127
CE801	2C	208	-130	212	-134	216	-137	220	-140	224	-141	228	-141		

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Table C3 (Continued)

CE801	31620727	300	80	-150					-88	50	-84	50	-80	50	-76	50
CE801	32	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50	
CE801	33	-44	50	-40	50	-36	49	-32	25	-28	20	-24	15	-20	13	
CE801	34	-16	10	-12	6	-8	3	-4	0	0	-3	4	-6	8	-9	
CE801	35	12	-10	16	-13	20	-17	24	-20	28	-22	32	-20	36	-24	
CE801	36	40	-25	44	-30	48	-18	52	-19	56	-25	60	-34	64	-40	
CE801	37	68	-44	72	-47	76	-50	80	-52	84	-54	88	-56	92	-59	
CE801	38	96	-62	100	-65	104	-67	108	-69	112	-72	116	-76	120	-79	
CE801	39	124	-82	128	-85	132	-89	136	-92	140	-94	144	-97	148	-99	
CE801	3A	152	-101	156	-102	160	-103	164	-105	168	-107	172	-109	176	-111	
CE801	3B	180	-113	184	-115	188	-117	192	-118	196	-121	200	-123	204	-127	
CE801	3C	208	-130	212	-134	216	-137	220	-140	224	-141	228	-141			
CE801	41620727	500	80	-150					-88	50	-84	50	-80	50	-76	50
CE801	42	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50	
CE801	43	-44	50	-40	50	-36	49	-32	25	-28	20	-24	15	-20	15	
CE801	44	-16	13	-12	9	-8	5	-4	1	0	-1	4	-4	8	-6	
CE801	45	12	-7	16	-9	20	-10	24	-12	28	-15	32	-17	36	-22	
CE801	46	40	-30	44	-22	48	-18	52	-22	56	-29	60	-37	64	-42	
CE801	47	68	-45	72	-48	76	-51	80	-52	84	-54	88	-56	92	-59	
CE801	48	96	-62	100	-65	104	-68	108	-69	112	-72	116	-75	120	-78	
CE801	49	124	-82	128	-85	132	-89	136	-92	140	-93	144	-96	148	-98	
CE801	4A	152	-100	156	-102	160	-103	164	-106	168	-107	172	-110	176	-110	
CE801	4B	180	-113	184	-115	188	-118	192	-119	196	-120	200	-123	204	-127	
CE801	4C	208	-130	212	-134	216	-137	220	-139	224	-141	228	-141			
CE801	51620727	1000	80	-150					-88	50	-84	50	-80	50	-76	50
CE801	52	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50	
CE801	53	-44	50	-40	50	-36	49	-32	25	-28	20	-24	15	-20	15	
CE801	54	-16	13	-12	8	-8	4	-4	0	0	0	4	-2	8	-2	
CE801	55	12	-4	16	-6	20	-9	24	-11	28	-15	32	-18	36	-23	
CE801	56	40	-29	44	-25	48	-19	52	-24	56	-30	60	-38	64	-42	
CE801	57	68	-46	72	-49	76	-51	80	-54	84	-55	88	-58	92	-61	
CE801	58	96	-63	100	-65	104	-68	108	-69	112	-72	116	-75	120	-78	
CE801	59	124	-81	128	-84	132	-87	136	-88	140	-93	144	-95	148	-97	
CE801	5A	152	-100	156	-102	160	-105	164	-105	168	-106	172	-108	176	-110	
CE801	5B	180	-113	184	-115	188	-117	192	-119	196	-121	200	-123	204	-127	
CE801	5C	208	-130	212	-134	216	-137	220	-139	224	-141	228	-141			
CE801	61620727	1500	80	-150					-88	50	-84	50	-80	50	-76	50
CE801	62	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50	
CE801	63	-44	50	-40	50	-36	49	-32	25	-28	20	-24	15	-20	14	
CE801	64	-16	12	-12	8	-8	5	-4	1	0	0	4	-1	8	-1	
CE801	65	12	-3	16	-5	20	-9	24	-13	28	-15	32	-17	36	-24	
CE801	66	40	-30	44	-22	48	-19	52	-25	56	-32	60	-39	64	-44	
CE801	67	68	-48	72	-51	76	-52	80	-55	84	-57	88	-59	92	-62	
CE801	68	96	-64	100	-66	104	-68	108	-70	112	-73	116	-75	120	-78	
CE801	69	124	-82	128	-84	132	-86	136	-89	140	-92	144	-94	148	-97	
CE801	6A	152	-100	156	-103	160	-104	164	-106	168	-107	172	-108	176	-111	
CE801	6B	180	-113	184	-115	188	-118	192	-119	196	-121	200	-123	204	-126	
CE801	6C	208	-130	212	-134	216	-137	220	-139	224	-141	228	-141			

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Table C3 (Continued)

CE801	71620727	2000	80	-150			-88	50	-84	50	-80	50	-76	50
CE801	72	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50
CE801	73	-44	50	-40	50	-36	49	-32	25	-28	20	-24	15	-20	15
CE801	74	-16	13	-12	9	-8	6	-4	2	0	0	4	0	8	0
CE801	75	12	-2	16	-5	20	-7	24	-11	28	-15	32	-16	36	-24
CE801	76	40	-29	44	-22	48	-19	52	-27	56	-34	60	-41	64	-46
CE801	77	68	-49	72	-53	76	-54	80	-56	84	-58	88	-60	92	-63
CE801	78	96	-65	100	-68	104	-68	108	-70	112	-72	116	-75	120	-78
CE801	79	124	-81	128	-84	132	-86	136	-89	140	-91	144	-94	148	-97
CE801	7A	152	-100	156	-102	160	-104	164	-105	168	-106	172	-108	176	-110
CE801	7B	180	-112	184	-115	188	-118	192	-119	196	-121	200	-123	204	-126
CE801	7C	208	-129	212	-133	216	-136	220	-139	224	-140	228	-141		
CE801	81620727	3000	80	-150			-88	50	-84	50	-80	50	-76	50
CE801	82	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50
CE801	83	-44	50	-40	50	-36	49	-32	25	-28	20	-24	15	-20	15
CE801	84	-16	13	-12	11	-8	8	-4	3	0	0	4	0	8	-2
CE801	85	12	-4	16	-7	20	-10	24	-13	28	-17	32	-21	36	-25
CE801	86	40	-27	44	-17	48	-21	52	-30	56	-35	60	-40	64	-44
CE801	87	68	-48	72	-51	76	-53	80	-55	84	-59	88	-62	92	-64
CE801	88	96	-66	100	-69	104	-69	108	-72	112	-74	116	-76	120	-79
CE801	89	124	-81	128	-82	132	-85	136	-87	140	-90	144	-93	148	-96
CE801	8A	152	-99	156	-101	160	-103	164	-105	168	-106	172	-108	176	-110
CE801	8B	180	-113	184	-115	188	-117	192	-119	196	-121	200	-123	204	-126
CE801	8C	208	-129	212	-133	216	-136	220	-139	224	-140	228	-141		
CE801	91620727	4000	80	-150			-88	50	-84	50	-80	50	-76	50
CE801	92	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50
CE801	93	-44	50	-40	50	-36	49	-32	25	-28	21	-24	18	-20	15
CE801	94	-16	13	-12	11	-8	8	-4	3	0	0	4	0	8	-1
CE801	95	12	-3	16	-6	20	-8	24	-11	28	-14	32	-17	36	-23
CE801	96	40	-31	44	-22	48	-20	52	-26	56	-35	60	-42	64	-47
CE801	97	68	-51	72	-54	76	-57	80	-58	84	-58	88	-61	92	-62
CE801	98	96	-64	100	-67	104	-69	108	-71	112	-72	116	-73	120	-76
CE801	99	124	-76	128	-81	132	-83	136	-84	140	-88	144	-91	148	-93
CE801	9A	152	-94	156	-99	160	-102	164	-104	168	-106	172	-108	176	-109
CE801	9B	180	-111	184	-114	188	-116	192	-119	196	-120	200	-121	204	-124
CE801	9C	208	-126	212	-130	216	-133	220	-136	224	-138	228	-140		
CE801	101620727	5000	80	-150			-88	50	-84	50	-80	50	-76	50
CE801	102	-72	50	-68	50	-64	50	-60	50	-56	50	-52	50	-48	50
CE801	103	-44	50	-40	50	-36	49	-32	25	-28	21	-24	18	-20	15
CE801	104	-16	13	-12	12	-8	8	-4	4	0	1	4	1	8	0
CE801	105	12	-2	16	-5	20	-8	24	-11	28	-15	32	-17	36	-26
CE801	106	40	-28	44	-19	48	-21	52	-31	56	-36	60	-39	64	-47
CE801	107	68	-51	72	-54	76	-57	80	-59	84	-61	88	-64	92	-67
CE801	108	96	-68	100	-70	104	-72	108	-72	112	-74	116	-77	120	-78
CE801	109	124	-80	128	-82	132	-84	136	-87	140	-90	144	-92	148	-96
CE801	10A	152	-98	156	-101	160	-103	164	-105	168	-107	172	-109	176	-110
CE801	10B	180	-113	184	-116	188	-118	192	-120	196	-121	200	-123	204	-126
CE801	10C	208	-129	212	-133	216	-136	220	-138	224	-139	228	-140		

(Continued)

Table C3 (Continued)

CASE 901

CE901	11620803	0	78	-130				-116	70	-112	70	-108	70	-104	70	
CE901	12	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	13	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	14	-44	30	-40	28	-36	25	-32	23	-28	20	-24	18	-20	14	
CE901	15	-16	11	-12	7	-8	5	-4	2	0	0	4	-2	8	-4	
CE901	16	12	-8	16	-11	20	-14	24	-16	28	-19	32	-21	36	-24	
CE901	17	40	-26	44	-29	48	-31	52	-34	56	-36	60	-39	64	-41	
CE901	18	68	-45	72	-47	76	-50	80	-52	84	-54	88	-56	92	-60	
CE901	19	96	-62	100	-65	104	-67	108	-71	112	-73	116	-76	120	-78	
CE901	1A	124	-81	128	-83	132	-86	136	-88	140	-92	144	-94	148	-98	
CE901	1B	152	-100	156	-103	160	-105	164	-109	168	-111	172	-115	176	-116	
CE901	1C	180	-119	184	-121	188	-123	192	-126							
CE901	21620803	100	78	-130				-116	70	-112	70	-108	70	-104	70	
CE901	22	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	23	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	24	-44	30	-40	28	-36	26	-32	26	-28	22	-24	19	-20	17	
CE901	25	-16	15	-12	9	-8	5	-4	0	0	-6	4	-7	8	-9	
CE901	26	12	-11	16	-12	20	-15	24	-18	28	-22	32	-25	36	-26	
CE901	27	40	-25	44	-27	48	-25	52	-27	56	-34	60	-34	64	-37	
CE901	28	68	-48	72	-59	76	-65	80	-68	84	-65	88	-57	92	-47	
CE901	29	96	-40	100	-40	104	-44	108	-52	112	-62	116	-69	120	-77	
CE901	2A	124	-87	128	81	132	-81	136	-88	140	-93	144	-93	148	-97	
CE901	2B	152	-103	156	-103	160	-105	164	-111	168	-114	172	-115	176	-120	
CE901	2C	180	-119	184	-120	188	-123	192	-126							
CE901	31620803	310	78	-130				-116	70	-112	70	-108	70	-104	70	
CE901	32	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	33	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	34	-44	31	-40	29	-36	27	-32	25	-28	21	-24	19	-20	16	
CE901	35	-16	12	-12	6	-8	0	-4	-5	0	-7	4	-8	8	-13	
CE901	36	12	-13	16	-12	20	-15	24	-19	28	-24	32	-28	36	-32	
CE901	37	40	-33	44	-32	48	-31	52	-32	56	-33	60	-40	64	-46	
CE901	38	68	-45	72	-41	76	-42	80	-50	84	-59	88	-66	92	-71	
CE901	39	96	-67	100	-59	104	-50	108	-44	112	-43	116	-48	120	-53	
CE901	3A	124	-62	128	-70	132	-78	136	-85	140	-90	144	-91	148	-94	
CE901	3B	152	-101	156	-106	160	-105	164	-108	168	-115	172	-118	176	-123	
CE901	3C	180	-125	184	-127	188	-126	192	-128							
CE901	41620803	620	78	-130				-116	70	-112	70	-108	70	-104	70	
CE901	42	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	43	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	44	-44	31	-40	29	-36	27	-32	24	-28	20	-24	17	-20	13	
CE901	45	-16	11	-12	5	-8	0	-4	-5	0	-9	4	-10	8	-14	
CE901	46	12	-17	16	-17	20	-16	24	-18	28	-24	32	-30	36	-35	
CE901	47	40	-39	44	-42	48	-44	52	-42	56	-38	60	-39	64	-43	
CE901	48	68	-45	72	-43	76	-40	80	-39	84	-45	88	-55	92	-65	
CE901	49	96	-69	100	-64	104	-55	108	-47	112	-43	116	-45	120	-49	
CE901	4A	124	-55	128	-63	132	-78	136	-84	140	-84	144	-92	148	-103	
CE901	4B	152	-104	156	-108	160	-110	164	-113	168	-119	172	-122	176	-123	
CE901	4C	180	-126	184	-126	188	-128	192	-129							

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(Sheet 1 of 2)

Table C3 (Continued)

CE901	51620803	930	78	-130			-116	70	-112	70	-108	70	-104	70
CE901	52	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70
CE901	53	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34
CE901	54	-44	31	-40	29	-36	27	-32	23	-28	19	-24	15	-20	12
CE901	55	-16	9	-12	3	-8	-2	-4	-10	0	-12	4	-19	8	-18
CE901	56	12	-16	16	-15	20	-15	24	-20	28	-24	32	-30	36	-36
CE901	57	40	-39	44	-44	48	-45	52	-45	56	-44	60	-42	64	-41
CE901	58	68	-43	72	-43	76	-41	80	-37	84	-33	88	-44	92	-57
CE901	59	96	-65	100	-64	104	-55	108	-46	112	-42	116	-43	120	-47
CE901	5A	124	-53	128	-60	132	-70	136	-84	140	-90	144	-94	148	-100
CE901	5B	152	-105	156	-111	160	-113	164	-117	168	-120	172	-123	176	-124
CE901	5C	180	-123	184	-125	188	-127	192	-128						
CE901	61620803	1240	78	-130			-116	70	-112	70	-108	70	-104	70
CE901	62	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70
CE901	63	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34
CE901	64	-44	31	-40	29	-36	27	-32	22	-28	17	-24	14	-20	10
CE901	65	-16	7	-12	2	-8	-3	-4	-7	0	-10	4	-12	8	-14
CE901	66	12	-13	16	-13	20	-14	24	-21	28	-26	32	-32	36	-37
CE901	67	40	-38	44	-41	48	-45	52	-48	56	-48	60	-46	64	-44
CE901	68	68	-44	72	-44	76	-42	80	-38	84	-36	88	-40	92	-51
CE901	69	96	-60	100	-62	104	-54	108	-46	112	-41	116	-42	120	-46
CE901	6A	124	-52	128	-58	132	-68	136	-82	140	-87	144	-95	148	-102
CE901	6B	152	-108	156	-112	160	-112	164	-114	168	-117	172	-121	176	-124
CE901	6C	180	-123	184	-124	188	-127	192	-128						
CE901	71620803	1550	78	-130			-116	70	-112	70	-108	70	-104	70
CE901	72	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70
CE901	73	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34
CE901	74	-44	31	-40	29	-36	27	-32	21	-28	16	-24	14	-20	10
CE901	75	-16	6	-12	1	-8	-4	-4	-8	0	-9	4	-11	8	-11
CE901	76	12	-12	16	-13	20	-16	24	-21	28	-28	32	-34	36	-37
CE901	77	40	-41	44	-45	48	-47	52	-48	56	-49	60	-49	64	-48
CE901	78	68	-43	72	-44	76	-43	80	-40	84	-36	88	-36	92	-44
CE901	79	96	-55	100	-61	104	-57	108	-48	112	-42	116	-40	120	-43
CE901	7A	124	-49	128	-56	132	-64	136	-74	140	-89	144	-95	148	-101
CE901	7B	152	-108	156	-110	160	-114	164	-117	168	-117	172	-120	176	-123
CE901	7C	180	-124	184	-125	188	-125	192	-128						
CE901	81620803	2380	78	-130			-116	70	-112	70	-108	70	-104	70
CE901	82	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70
CE901	83	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34
CE901	84	-44	31	-40	29	-36	25	-32	21	-28	17	-24	15	-20	12
CE901	85	-16	9	-12	4	-8	-1	-4	-6	0	-8	4	-10	8	-12
CE901	86	12	-15	16	-15	20	-18	24	-20	28	-28	32	-36	36	-42
CE901	87	40	-45	44	-48	48	-50	52	-50	56	-51	60	-51	64	-49
CE901	88	68	-44	72	-44	76	-44	80	-43	84	-39	88	-36	92	-42
CE901	89	96	-52	100	-58	104	-57	108	-48	112	-42	116	-40	120	-43
CE901	8A	124	-49	128	-55	132	-63	136	-78	140	-91	144	-96	148	-100
CE901	8B	152	-107	156	-111	160	-113	164	-115	168	-119	172	-121	176	-123
CE901	8C	180	-124	184	-125	188	-126	192	-128						

(Continued)

Table C3 (Continued)

CE901	91620803	3100	78	-130				-116	70	-112	70	-108	70	-104	70	
CE901	92	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	93	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	94	-44	31	-40	29	-36	26	-32	24	-28	22	-24	20	-20	16	
CE901	95	-16	13	-12	7	-8	0	-4	-5	0	-10	4	-13	8	-14	
CE901	96	12	-15	16	-20	20	-26	24	-29	28	-32	32	-37	36	-41	
CE901	97	40	-45	44	-51	48	-54	52	-54	56	-53	60	-52	64	-49	
CE901	98	68	-47	72	-46	76	-47	80	-46	84	-43	88	-38	92	-41	
CE901	99	96	-52	100	-60	104	-61	108	-54	112	-45	116	-40	120	-41	
CE901	9A	124	-46	128	-52	132	-59	136	-74	140	-86	144	-93	148	-97	
CE901	9B	152	-104	156	-109	160	-111	164	-110	168	-115	172	-118	176	-121	
CE901	9C	180	-123	184	-124	188	-126	192	-127							
CE901	101620803	3410	78	-130				-116	70	-112	70	-108	70	-104	70	
CE901	102	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	103	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	104	-44	31	-40	29	-36	27	-32	25	-28	22	-24	20	-20	16	
CE901	105	-16	13	-12	7	-8	1	-4	-5	0	-11	4	-12	8	-14	
CE901	106	12	-15	16	-20	20	-27	24	-31	28	-34	32	-36	36	-40	
CE901	107	40	-45	44	-49	48	-51	52	-51	56	-52	60	-52	64	-53	
CE901	108	68	-51	72	-49	76	-47	80	-45	84	-41	88	-38	92	-42	
CE901	109	96	-52	100	-60	104	-62	108	-55	112	-46	116	-41	120	-41	
CE901	10A	124	-46	128	-52	132	-58	136	-71	140	-85	144	-91	148	-96	
CE901	10B	152	-100	156	-106	160	-108	164	-112	168	-116	172	-121	176	-122	
CE901	10C	180	-124	184	-124	188	-125	192	-127							
CE901	111620803	3757	78	-130				-116	70	-112	70	-108	70	-104	70	
CE901	112	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	113	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	114	-44	31	-40	29	-36	27	-32	27	-28	24	-24	22	-20	18	
CE901	115	-16	15	-12	9	-8	2	-4	-4	0	-11	4	-15	8	-17	
CE901	116	12	-17	16	-23	20	-29	24	-32	28	-36	32	-38	36	-42	
CE901	117	40	-44	44	-47	48	-50	52	-54	56	-53	60	-52	64	-52	
CE901	118	68	-51	72	-50	76	-47	80	-47	84	-44	88	-40	92	-43	
CE901	119	96	-54	100	-63	104	-63	108	-56	112	-46	116	-41	120	-42	
CE901	11A	124	-46	128	-52	132	-59	136	-72	140	-87	144	-95	148	-96	
CE901	11B	152	-101	156	-102	160	-108	164	-113	168	-115	172	-118	176	-121	
CE901	11C	180	-125	184	-125	188	-126	192	-128							
CE901	121620803	4030	78	-130				116	70	-112	70	-108	70	-104	70	
CE901	122	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70	
CE901	123	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34	
CE901	124	-44	31	-40	29	-36	28	-32	28	-28	26	-24	24	-20	20	
CE901	125	-16	17	-12	11	-8	4	-4	-2	0	-8	4	-14	8	-16	
CE901	126	12	-23	16	-26	20	-29	24	-35	28	-37	32	-39	36	-42	
CE901	127	40	-43	44	-46	48	-49	52	52	56	-54	60	-54	64	-54	
CE901	128	68	-53	72	-53	76	-50	80	-48	84	-43	88	-40	92	-44	
CE901	129	96	-54	100	-63	104	-62	108	-52	112	-44	116	-41	120	-42	
CE901	12A	124	-47	128	-53	132	-59	136	-73	140	-81	144	-88	148	-97	
CE901	12B	152	-104	156	-106	160	-105	164	-109	168	-112	172	-116	176	-119	
CE901	12C	180	-123	184	-124	188	-124	192	-127							

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(Sheet [illegible] of [illegible])

Table C3 (Continued)

CE901	131620803	4960	78	-130			-116	70	-112	70	-108	70	-104	70	
CE901	132	-100	70	-96	70	-92	70	-88	70	-84	70	-80	70	-76	70
CE901	133	-72	70	-68	70	-64	51	-60	40	-56	38	-52	36	-48	34
CE901	134	-44	31	-40	29	-36	29	-32	32	-28	33	-24	29	-20	25
CE901	135	-16	21	-12	14	-8	6	-4	-1	0	-8	4	-15	8	-19
CE901	136	12	-23	16	-30	20	-35	24	-40	28	-42	32	-42	36	-44
CE901	137	40	-45	44	-46	48	-46	52	-49	56	-51	60	-51	64	-53
CE901	138	68	-54	72	-54	76	-53	80	-50	84	-44	88	-38	92	-41
CE901	139	96	-54	100	-63	104	-62	108	-54	112	-47	116	-43	120	-44
CE901	13A	124	-48	128	-53	132	-59	136	-70	140	-83	144	-94	148	-97
CE901	13B	152	-99	156	-102	160	-104	164	-104	168	-111	172	-117	176	-117
CE901	13C	180	-123	184	-125	188	-125	192	-128						

CASE 911

CE911	11620809	0	65	-128			-62	42	-58	39	-54	36	-50	34	
CE911	12	-46	32	-42	29	-38	26	-34	24	-30	22	-26	19	-22	16
CE911	13	-18	13	-14	10	-10	7	-6	4	-2	2	2	-2	6	-4
CE911	14	10	-7	14	-10	18	-12	22	-16	26	-19	30	-21	34	-24
CE911	15	38	-26	42	-29	46	-31	50	-33	54	-36	58	-39	62	-41
CE911	16	66	-44	70	-46	74	-49	78	-52	82	-54	86	-56	90	-56
CE911	17	94	-60	98	-63	102	-66	106	-68	110	-71	114	-74	118	-76
CE911	18	122	-80	126	-82	130	-84	134	-86	138	-90	142	-92	146	-96
CE911	19	150	-98	154	-101	158	-104	162	-108	166	-110	170	-113	174	-117
CE911	1A	178	-118	182	-120	186	-123	190	-126	194	-128				
CE911	21620809	100	65	-128			-62	42	-58	40	-54	37	-50	34	
CE911	22	-46	34	-42	35	-38	33	-34	30	-30	23	-26	15	-22	10
CE911	23	-18	6	-14	4	-10	2	-6	0	-2	-1	2	-3	6	-6
CE911	24	10	-9	14	-13	18	-17	22	-19	26	-17	30	-17	34	-22
CE911	25	38	-29	42	-32	46	-27	50	-27	54	-31	58	-43	62	-54
CE911	26	66	-63	70	-68	74	-68	78	-56	82	-47	86	-39	90	-33
CE911	27	94	-34	98	-38	102	-44	106	-54	110	-64	114	-68	118	-73
CE911	28	122	-74	126	-76	130	-81	134	-86	138	-86	142	-92	146	-99
CE911	29	150	-98	154	-104	158	-110	162	-118	166	-117	170	-116	174	-119
CE911	2A	178	-118	182	-122	186	-126	190	-128	194	-128				
CE911	31620809	310	66	-127			-66	44	-62	43	-58	42	-54	40	
CE911	32	-50	36	-46	33	-42	30	-38	27	-34	22	-30	16	-26	10
CE911	33	-22	6	-18	4	-14	2	-10	-1	-6	-2	-2	-3	2	-3
CE911	34	6	-7	10	-12	14	-16	18	-22	22	-25	26	-26	30	-25
CE911	35	34	-23	38	-24	42	-26	46	-28	50	-35	54	-35	58	-37
CE911	36	62	-37	66	-42	70	-51	74	-58	78	-61	82	-65	86	-64
CE911	37	90	-55	94	-42	98	-35	102	-31	106	-33	110	-39	114	-46
CE911	38	118	-54	122	-68	126	-73	130	-80	134	-90	138	-90	142	-92
CE911	39	146	-103	150	-102	154	-103	158	-114	162	-111	166	-113	170	-117
CE911	3A	174	-120	178	-125	182	-125	186	-125	190	-127	194	-127		

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(Sheet 24 of 27)

Table C3 (Continued)

CE911	41620809	620	66	-128			-66	45	-62	43	-58	42	-54	39	
CE911	42	-50	35	-46	31	-42	26	-38	22	-34	18	-30	15	-26	12
CE911	43	-22	8	-18	4	-14	1	-10	2	-6	-1	-2	-5	2	-8
CE911	44	6	-10	10	-16	14	-18	18	-21	22	-24	26	-26	30	-27
CE911	45	34	-27	38	-29	42	-31	46	-30	50	-35	54	-34	58	-38
CE911	46	62	-44	66	-43	70	-40	74	-39	78	-38	82	-38	86	-45
CE911	47	90	-55	94	-64	98	-65	102	-56	106	-46	110	-41	114	-41
CE911	48	118	-46	122	-52	126	-59	130	-69	134	-84	138	-91	142	-90
CE911	49	146	-102	150	-102	154	-108	158	-110	162	-112	166	-116	170	-120
CE911	4A	174	-123	178	-125	182	-125	186	-126	190	-128	194	-128		
CE911	51620809	930	66	-128			-66	44	-62	43	-58	42	-54	39	
CE911	52	-50	34	-46	30	-42	26	-38	22	-34	18	-30	15	-26	12
CE911	53	-22	10	-18	7	-14	3	-10	0	-6	-2	-2	-5	2	-9
CE911	54	6	-15	10	-19	14	-21	18	-23	22	-24	26	-28	30	-29
CE911	55	34	-30	38	-32	42	-35	46	-36	50	-37	54	-35	58	-37
CE911	56	62	-40	66	-41	70	-41	74	-38	78	-38	82	-43	86	-49
CE911	57	90	-60	94	-60	98	-52	102	-47	106	-60	110	-68	114	-62
CE911	58	118	-52	122	-51	126	-53	130	-59	134	-65	138	-72	142	-82
CE911	59	146	-102	150	-106	154	-107	158	-114	162	-115	166	-115	170	-120
CE911	5A	174	-124	178	-123	182	-125	186	-127	190	-128	194	-128		
CE911	61620809	1240	66	-128			-66	44	-62	43	-58	42	-54	39	
CE911	62	-50	35	-46	31	-42	26	-38	22	-34	19	-30	18	-26	17
CE911	63	-22	15	-18	10	-14	3	-10	-4	-6	-10	-2	-14	2	-14
CE911	64	6	-17	10	-20	14	-20	18	-20	22	-20	26	-23	30	-28
CE911	65	34	-31	38	-33	42	-36	46	-41	50	-42	54	-42	58	-42
CE911	66	62	-42	66	-39	70	-39	74	-43	78	-44	82	-46	86	-49
CE911	67	90	-46	94	-60	98	-71	102	-68	106	-58	110	-45	114	-42
CE911	68	118	-44	122	-47	126	-52	130	-57	134	-62	138	-68	142	-76
CE911	69	146	-95	150	-104	154	-106	158	-108	162	-112	166	-116	170	-121
CE911	6A	174	-122	178	-124	182	-125	186	-126	190	-128	194	-128		
CE911	71620809	1550	66	-129			-66	45	-62	44	-58	42	-54	39	
CE911	72	-50	35	-46	32	-42	29	-38	26	-34	21	-30	15	-26	6
CE911	73	-22	3	-18	-1	-14	-4	-10	-6	-6	-8	-2	-9	2	-11
CE911	74	6	-11	10	-12	14	-15	18	-20	22	-23	26	-29	30	-31
CE911	75	34	-35	38	-39	42	-41	46	-41	50	-40	54	-43	58	-39
CE911	76	62	-36	66	-39	70	-41	74	-46	78	-49	82	-60	86	-69
CE911	77	90	-64	94	-51	98	-38	102	-33	106	-33	110	-34	114	-39
CE911	78	118	-44	122	-49	126	-55	130	-62	134	-76	138	-87	142	-89
CE911	79	146	-94	150	-103	154	-103	158	-105	162	-114	166	-115	170	-119
CE911	7A	174	-123	178	-119	182	-124	186	-126	190	-127	194	-129		

(Continued)

(Sheet [illegible])

Table C3 (Continued)

CE911	81620809	2480	65	-128			-62	44	-58	43	-54	38	-50	36
CE911	82	-46	30	-42	26	-38	22	-34	18	-30	15	-26	15	-22	21
CE911	83	-18	17	-14	10	-10	2	-6	-5	-2	-12	2	-16	6	-18
CE911	84	10	-22	14	-27	18	-29	22	-32	26	-34	30	-36	34	-38
CE911	85	38	-39	42	-41	46	-43	50	-44	54	-45	58	-47	62	-48
CE911	86	66	-46	70	-43	74	-40	78	-40	82	-46	86	-48	90	-48
CE911	87	94	-50	98	-63	102	-71	106	-67	110	-53	114	-43	118	-43
CE911	88	122	-44	126	-48	130	-52	134	-56	138	-60	142	-71	146	-82
CE911	89	150	-91	154	-104	158	-105	162	-105	166	-111	170	-115	174	-118
CE911	8A	178	-122	182	-124	186	-124	190	-126	194	-128				
CE911	91620809	3100	66	-127			-66	46	-62	44	-58	42	-54	40
CE911	92	-50	38	-46	33	-42	28	-38	25	-34	20	-30	16	-26	11
CE911	93	-22	4	-18	0	-14	-4	-10	-5	-6	-5	-2	-7	2	-10
CE911	94	6	-14	10	-18	14	-23	18	-28	22	-32	26	-37	30	-42
CE911	95	34	-42	38	-44	42	-45	46	-46	50	-47	54	-45	58	-44
CE911	96	62	-41	66	-44	70	-43	74	-39	78	-42	82	-42	86	-43
CE911	97	90	-40	94	-40	98	-53	102	-61	106	-58	110	-48	114	-41
CE911	98	118	-41	122	-44	126	-51	130	-56	134	-63	138	-78	142	-86
CE911	99	146	-95	150	-96	154	-103	158	-103	162	-110	166	-116	170	-118
CE911	9A	174	-118	178	-122	182	-125	186	-124	190	-126	194	-127		
CE911	101620809	3410	65	-129			-62	45	-58	42	-54	40	-50	37
CE911	102	-46	34	-42	29	-38	25	-34	20	-30	16	-26	13	-22	11
CE911	103	-18	10	-14	8	-10	6	-6	1	-2	-7	2	-14	6	-21
CE911	104	10	-27	14	-32	18	-36	22	-38	26	-40	30	-42	34	-43
CE911	105	38	-44	42	-45	46	-46	50	-48	54	-47	58	-48	62	-48
CE911	106	66	-43	70	-42	74	-44	78	-41	82	-41	86	-40	90	-41
CE911	107	94	-46	98	-53	102	-56	106	-55	110	-50	114	-57	118	-68
CE911	108	122	-71	126	-63	130	-55	134	-54	138	-58	142	-64	146	-69
CE911	109	150	-76	154	-92	158	-106	162	-106	166	-112	170	-117	174	-118
CE911	10A	178	-120	182	-124	186	-125	190	-126	194	-129				
CE911	111620809	3720	66	-126			-66	46	-62	44	-58	42	-54	40
CE911	112	-50	38	-46	34	-42	29	-38	25	-34	21	-30	19	-26	22
CE911	113	-22	21	-18	18	-14	9	-10	0	-6	-7	-2	-15	2	-18
CE911	114	6	-21	10	-24	14	-33	18	-38	22	-39	26	-40	30	-42
CE911	115	34	-44	38	-42	42	-44	46	-46	50	-47	54	-50	58	-51
CE911	116	62	-52	66	-54	70	-53	74	-48	78	-42	82	-44	86	-46
CE911	117	90	-47	94	-49	98	-50	102	-64	106	-70	110	-66	114	-52
CE911	118	118	-43	122	-43	126	-44	130	-48	134	-51	138	-56	142	-62
CE911	119	146	-74	150	-86	154	-96	158	-100	162	-104	166	-109	170	-112
CE911	11A	174	-118	178	-121	182	-124	186	-125	190	-126	194	-126		

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Table C3 (Concluded)

CE911	121620809	4030	66	-127				-66	46	-62	45	-58	43	-54	43
CE911	122	-50	43	-46	42	-42	38	-38	34	-34	26	-30	19	-26	12
CE911	123	-22	4	-18	-3	-14	-4	-10	-6	-6	-12	-2	-11	2	-7
CE911	124	6	-14	10	-22	14	-27	18	-31	22	-34	26	-38	30	-41
CE911	125	34	-43	38	-44	42	-46	46	-49	50	-49	54	-49	58	-50
CE911	126	62	-48	66	-46	70	-44	74	-45	78	-47	82	-48	86	-54
CE911	127	90	-62	94	-68	98	-62	102	-50	106	-39	110	-34	114	-34
CE911	128	118	-35	122	-39	126	-44	130	-50	134	-58	138	-72	142	-88
CE911	129	146	-83	150	-89	154	-94	158	-103	162	-103	166	-103	170	-112
CE911	12A	174	-119	178	-118	182	-127	186	-122	190	-124	194	-126		

APPENDIX D: NOTATION

g	Acceleration of gravity
h	Depth
h_c	Depth at bar crest
H_o	Deepwater wave height
L_o	Deepwater wavelength
q	Cross-shore sand transport rate
t	Time
T	Wave period
w	Sand fall velocity
x	Horizontal coordinate or distance
x_o	Location of no profile change
Z_b	Maximum berm height
Z_B	Maximum bar height
$(X_{CM})_b$	Location of berm center of mass
$(X_{CM})_B$	Location of bar center of mass
1	Subscript denoting condition at time 1
2	Subscript denoting condition at time 2
π	Numerical constant (3.14159...)